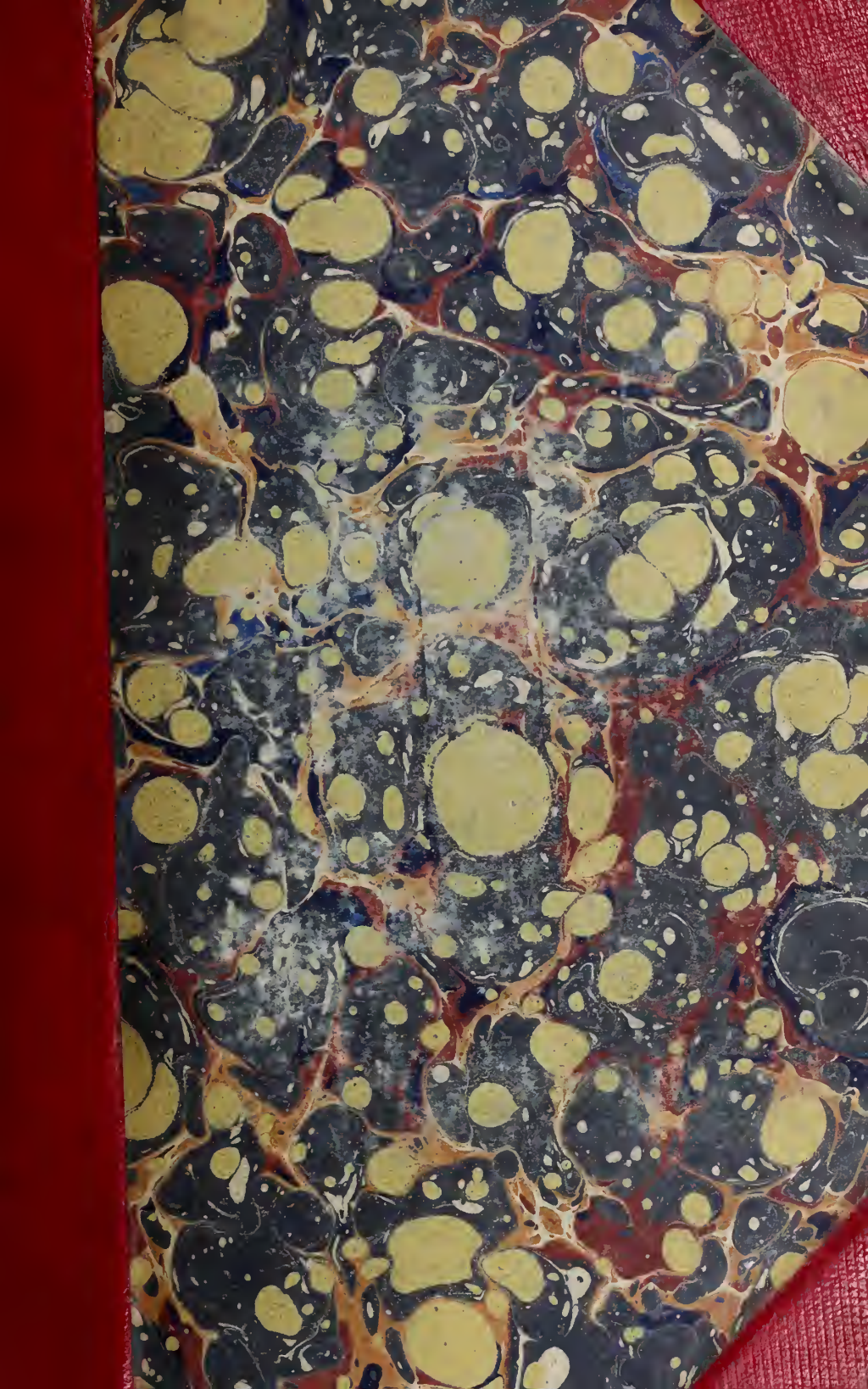

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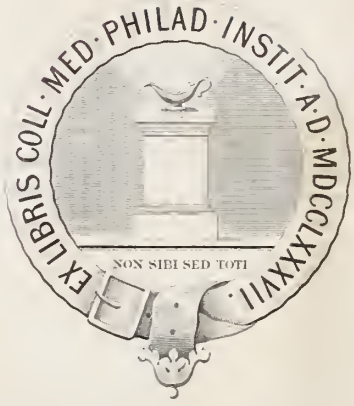

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THE CHICAGO

MEDICAL EXAMINER,

A MONTHLY JOURNAL, DEVOTED TO THE

EDUCATIONAL, SCIENTIFIC AND PRACTICAL INTERESTS

OF THE

MEDICAL PROFESSION.

EDITED BY

N. S. DAVIS, M.D.,

PROFESSOR OF PRINCIPLES AND PRACTICE OF MEDICINE AND OF CLINICAL MEDICINE, IN THE CHICAGO MEDICAL COLLEGE, ETC., ETC.

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CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., EDITOR.

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Original Contributions.

ARTICLE I.

MEDICAL ADVERTISEMENTS.

The committee to whom was referred the subject of immoral and injurious medical advertisements, respectfully ask the privilege of making the following report:—

Of all the various methods devised for obtaining money by false pretences, none are carried on so extensively, or are so prolific of evil to the community, as that of medical advertising in newspapers, handbills, &c. The extent of this systematic swindling cannot be appreciated without a somewhat extensive investigation of the subject. The simple fact, however, that nearly all the newspapers in the country have from one to four columns occupied with this kind of advertisements, paid for at ordinary rates, and the further fact that every alternate fence-post, board, rock, or door-step in the country is covered with the same kind of literature, shows that an aggregate of several millions of dollars are expended annually for this purpose. Of course, all these *millions*, with liberal additions, are received back from such members of the community as can be deceived by pretension and falsehood. The class of medical advertisements to which we allude may be divided into three varieties: First, such as set forth the efficacy and importance of particular medicines in the cure of ordinary diseases. Second, such

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as represent the unusual and extraordinary skill and success of Dr. A. or Dr. B. in the treatment of this or that class of ordinary chronic diseases. And, third, such as relate directly to the treatment of the diseases and consequences of licentiousness.

The nature and objects of the first variety will be readily seen by the following extract, selected from the first advertisement of a medical character that met the eye on opening a daily newspaper:—

"Helmbold's Highly Concentrated Compound Fluid Extract Buchu. A *positive* and *specific* remedy for Diseases of the Bladder, Kidneys, Gravel, and Dropsical Swellings; for Weaknesses arising from excesses, habits of dissipation, early indiscretion, or abuse; for Decline or Change of Life, attended by indisposition to exertion, loss of memory, weak nerves, horror of disease, &c., &c."

The two leading traits of all this variety of advertisements are, first, the claim that the medicine is a "*positive and specific remedy;*" and, second, the enumeration of such a list of symptoms that every invalid will find among them some one or more which corresponds with his own, and be thereby led to imagine the medicine specially designed for his relief. The positive claim thus set up is known to be false, not only by every intelligent physician, but by the advertiser himself. But the unqualified assertion of curative properties, coupled with the ingenious enumeration of such symptoms as would apply to almost any chronic malady, is admirably calculated to win the confidence of the sick, so far as to make them desirous of giving it a trial. A trial involves the purchase of a bottle or box, as the case may be, and this accomplishes all the advertiser expects. The framing and publication of such advertisements is just as deliberate a fraud as it would be for an individual to enter a store with false testimonials of wealth and character, and thereby obtain a bill of goods on credit.

The nature and style of the second variety of advertisements is well-illustrated by the following, taken from another of our morning papers:—

"Dr. D. MacRae's Medical Institute, at 149 South Clark St.,

Chicago, Ill. P.O. Box, 2156. The above Medical Institute is intended for special treatment of all chronic diseases of the *Eye, Ear, Throat, and Lungs.* Having for years studied anatomically, physiologically, and pathologically, all diseases of the human system, together with all malignant diseases of a tumefied character, such as Cancer, Fistula, and Piles, are *successfully* treated. DR. D. MAC RAE."

This though rather less bombastic and pretentious than most of those belonging to this class, yet affords an excellent type of the whole. The Doctor's simple office is dignified with the title of "Medical Institute," to create the impression throughout the country that he is at the head of some hospital, school, or other organized institution. Then comes the claim of having devoted "years of study," in some extraordinary way, to certain chronic classes of disease; and, finally, the positive assurance that all affections of that particular kind are "*successfully*" treated. To say that such advertisements are barefaced and deliberate frauds on the public, does not adequately characterize them. Like the one just quoted, they all include a pretence of special attention to, and ability to cure certain diseases that are in their nature, to a great extent at least, incurable; and are directly designed by their authors to attract the attention and delude by false hopes such persons as have been long afflicted and are ready to listen to any pretensions and make any pecuniary sacrifices that are accompanied by brazen assurances of relief. As an illustration, take the subject of cancer. A little boy is attacked with the most malignant form of the disease, in the bone of one side of his head and eye. Its location and nature show clearly to every intelligent and candid surgeon that it is totally incapable of remedy. The parents are truthfully informed, by their regular medical attendants, of the nature of the case, and of the palliative measures which are all that can benefit the patient. But just now comes under the eye of the afflicted parent a newspaper advertisement, in which the doctor claims cancer as among the diseases "successfully treated" by him. As a forlorn hope he is sent for. With pompous pretension, he sets at naught the opinions given by the intelligent and candid physician or surgeon who had at-

tended the case, and authoritatively announces, that for fifty or one hundred dollars down, and as much more in a few weeks, he can remove the whole disease and have the patient restored to health. As drowning men catch at straws, so anxious parents, and adults weakened by disease, catch at every positive assurance, no matter how absurd. Consequently, the money is produced; the so-called doctor having been careful to secure the presence of a newspaper reporter, proceeds with the pretended operation, and the next morning we read, under the caption of "Important Surgical Operation," a glowing account of the removal of some formidable disease by Dr. M., after the patient had been given up by several distinguished surgeons. Thus the unprincipled charlatan pockets the poor patient's money, gets an editorial newspaper advertisement, in the form of a puff, and lies in wait for his next victim. Of course, in a few weeks, the duped patient finds his disease advancing more rapidly than ever to a fatal result, and silently sinks into his grave. But the newspaper report of the "Important Surgical Operation" is never corrected, and, consequently, its readers are left to wonder at the doctor's success, long after the poor patient is in his grave. It is surprising to notice the readiness with which newspaper reporters and proprietors are induced to become the medium of the grossest imposition upon the public, in relation to this class of cases. If they do it ignorantly, it is certainly high time they took measures to enlighten themselves. If they do it knowingly, for pay, then are they *particeps criminis*, in the meanest of all methods of obtaining money under false pretences. For it is difficult to conceive a meaner act than the deliberate deception of anxious parents or weakened and suffering invalids, for purposes of mere pecuniary gain.

The third class of advertisements, embracing those which the Society doubtless had more especially in view in appointing the undersigned committee, relate to the diseases and other consequences of licentiousness. It includes all those advertisements relating to "*Private Diseases*," the removal of "Female Obstructions and Weaknesses," and protection against too rapid an increase of families; whether they fill the columns of news-

papers, or disgrace the fence posts, street corners, &c., or are thrown in profusion into public conveyances, or upon the doorsteps of public and private dwellings. They constitute a class of reading matter too disgusting to describe, and too demoralizing to be tolerated for a day in any well-regulated community.

There are three varieties of this class of advertisements, two of which are found in the columns of newspapers, and the other, in the form of handbills and pamphlets, is pasted along the streets, thrown into public conveyances, and left upon the doorsteps of private dwellings. They all possess, in a greater or less degree, three qualities, namely, false pretensions, obscenity, and either direct or indirect encouragement to vice and crime.

The false pretensions consist in, first, the most abominable lying in regard to the previous education, experience, and official positions of the pretended doctors, for curing private diseases; and, second, the positive and unqualified promise to cure permanently and speedily, "all the chronic and private diseases of the two sexes." Whoever opens a newspaper, and glances at these advertisements, and then remembers that not one of these advertising pretenders has any actual medical education, or has ever studied medicine proper in their lives, and that they are not recognized as belonging to the medical profession by any respectable physician in the country, will have some idea of their impudently fraudulent character. And yet who can estimate the number of victims, of both sexes, who are annually caught, and their pockets emptied by these very pretensions.

Their obscenity consists in the enumeration of every variety of disease arising from illicit sexual intercourse, and vicious sexual indulgences, with minute and vulgar descriptions of the sexual organs, sometimes illustrated by cuts. It is impossible to have these advertisements before the youth of both sexes, in the family newspapers, in handbills along the streets, in pamphlets and cards thrown into houses and yards, without making them more or less familiar with the most debasing vices and the most loathsome diseases; and that too, in such a way as to make the former appear only as "*youthful indiscretions*," or

necessary appendages to human society, while the latter are stripped of all their terrors by the most positive assurances of speedy, safe, and permanent cures. And here comes in the strong encouragement given by these advertisements to vice and crime. The first step towards the indulgence in any vice or the commission of a crime, is to familiarize such vice or crime to the thought of the individual; and the second, is the positive assurance of immunity, or speedy relief, from whatever diseases or evil consequences may come from actual indulgence in the vice or commission of the crime. And in both these aspects, it would defy the ingenuity of man to devise anything more demoralizing to the community than the class of advertisements under discussion.

Their pompous pretensions and adroit enumeration and description of such diseases and organs as are calculated to awaken the curiosity of the young, are admirably calculated to attract the attention and familiarize the mind with thoughts of the most vicious character; while the deceptive assurances of sure and permanent cures, daily lessens the dread of consequences, until the vicious thoughts are recklessly accompanied by acts that leave upon the victim a moral and physical stain for life. But the most criminal quality of a certain variety of this class of advertisements remains to be noticed. We allude to those which directly and shamelessly encourage illicit and excessive sexual intercourse, both by the married and the unmarried, by promising safe and certain means for "*preventing an increase of family*," by either preventing conception, or procuring abortion. As a sample of this class, take the following, from the columns of one of our Chicago daily papers:—

"Highly Important to Married People.—New and Wonderful Discoveries in Physiology.—How to Control the Sex of Offspring, and *Prevent* an Increase of Family, with *Absolute Certainty*, without the possibility of failure, &c., &c."

No language can express the depth of depravity that dictates such advertisements, or the demoralizing effects they produce, especially upon the female sex. The fundamental idea set forth is, that free sexual intercourse may be indulged, while by

the use of certain medicines, or the adoption of certain measures, the natural and ordinary consequences of such intercourse can be safely and certainly prevented. This idea, though utterly false in itself, has, nevertheless, gained such universal distribution and credence, during the last quarter of a century, that the number of painful and protracted uterine diseases, and the number of actual deaths, induced by the use of medicines and other means for either preventing conception or inducing abortion, is actually frightful to contemplate. Scarcely a week passes in any of our larger cities, that some female does not sacrifice her life as the direct consequence of such attempts, not one in twenty of which are ever known to the public, or outside of the immediate agents and attendants. The pernicious effects of the idea inculcated in these advertisements, and by a class of professional male and female murderers who, for $25.00 or $50.00, will undertake, deliberately, the work of fœtal murder, is not restricted to the production of a frightful amount of disease and death, but is plainly visible in the rapidly increasing repugnance manifested by married people, of both sexes and in all ranks of society, against bearing children or discharging the ordinary duties of parentage. It would require but a moderate amount of investigation, to show that this actually constitutes one of the most corrupting and destructive evils of modern society.

Having thus analyzed the character, and briefly stated the demoralizing and destructive consequences of what are usually styled *medical advertisements*, the next inquiry is, who are the parties responsible for their existence, and, of course, for their consequences also? The parties primarily responsible, are the authors of the advertisements, and the proprietors of newspapers who furnish the medium through which most of them reach the public. That newspaper publishers are morally and justly responsible for the character and influence of the advertisements they daily send to the firesides of their patrons, is as clear and certain as that the receiver of stolen goods is *particeps criminis* with the thief. They cannot plead ignorance of the character of the advertisements, for they are as much

bound to know the character and influence of the advertising as of the editorial columns of the sheet they publish. The truth is, that Thompson, Bigelow, Whittier, Helmhold, or some other of the same genus, sits down and writes a quarter, half, or whole column of reading matter, in the form of an advertisement, containing the most glaring falsehoods, the most obscene allusions, and the most artful covering of loathsome vices, under the sugared phrases, "Unfortunate," and "Youthful Indiscretions," and, for a stipulated sum in money, the publisher deliberately puts the matter in print and sends it directly into from one to twenty thousand families daily or weekly, as the case may be. Now, by what rule of ethics, morals, or logic can the maker of the advertisement be held responsible for its legitimate effects, without including with him the publisher also? Advertising is, emphatically, the capital stock of the charlatan and nostrum vender. The proprietors and publishers of newspapers deliberately furnish this capital stock and share largely in the pecuniary profits. Can they escape an equal share of responsibility?

But while the makers and publishers are primarily responsible for their character and all the consequences that flow from them, in a secondary or more remote sense, our legislators, both State and Municipal, and our courts of justice are scarcely less so. For it is universally conceded to be the fundamental duty of the one, to enact such laws as will protect the lives and property of all classes of citizens, and of the other, to see that such laws are faithfully executed. And, certainly, in regard to no class of citizens, is this duty more sacredly binding, than in regard to such as are afflicted and enfeebled by disease. Practically, however, this is almost the only class, in our country, whose interests are left fully exposed to the prey of every species of pretension and fraud. If a man, by false statements, induces a merchant to sell him a bundle of goods on credit, he is amenable to prompt arrest and punishment. But if the unprincipled empiric sends, through the newspapers or by handbill, a totally false statement of his education, and ability to cure certain diseases, and thereby induces the invalid to employ

and pay him for services that are worse than useless, he pockets his ill-gotten gains and continues the systematic work of deception with impunity. It is true, that we have upon the statute books of this State adequate laws for the punishment of fraud and deception, but it is evident that they were framed with direct reference to the transaction of ordinary business; and it is only by a judicial extension of the principles they involve, that they could be applied to the protection of the sick against the fraudulent pretensions of the advertising charlatan. It is the duty of our legislators to so revise the statutes on this subject, as to protect the sick with the same directness and efficiency as they do the merchant or the mechanic. We have, also, in the municipal laws of our city, a section prohibiting the exposure or sale of obscene, lewd, or demoralizing books, pamphlets, cards, &c., which fully recognizes the correct principle, that the community needs protection in this direction. But the language needs revision, to make the principle fully and practically apply to the suppression of all the advertisements and handbills relating to the diseases and consequences of licentiousness. That they are obscene in their nature, and, in their influence, corrupting to public morals, few reflecting men will deny. Therefore, laws for their suppression are as appropriate as laws for the suppression of licentiousness itself.

Hence, if, as we have endeavored to show, the whole series of medical advertisements relating to particular medicines, to doctors treating special diseases with extraordinary skill, and to the treatment of the diseases and other consequences of licentiousness are justly amenable either to the charge of attempts to obtain money by false pretenses, or to that of obscenity and corruption of public morals, and often to both, the remedy is obvious. It is, or should be, the duty of the prosecuting attorney of every judicial district, to present the authors and publishers of every such advertisement to the grand jury, for indictment and suppression. The recent case in the Recorder's Court, in this city, which resulted in imposing a fine of $100 on a notorious "private disease" doctor, for printing and dis-

tributing *obscene* pamphlets or handbills, shows that some, at least, of those occupying judicial positions, are ready to discharge their duty, in regard to the evils of which we complain. To bring about the proper legislative and judicial action, however, public sentiment, generally, must be awakened and corrected. For this purpose, it is the duty of members of our profession to more frequently expose, through the public press, such cases of gross imposition and fraud as are almost constantly coming under their direct observation. In furtherance of the same object, special efforts should be made to patronize and sustain the small number of newspapers and periodicals that actually exclude from their columns all such advertisements as are alluded to in this report. This would strongly encourage an increase in the number of such papers, until newspaper proprietors, generally, would ultimately find their *pecuniary* interests coinciding with their moral obligations in relation to this subject.

N. S. DAVIS,
Chairman.

ARTICLE II.

REPORT ON THE SANITARY CONDITION OF CHICAGO, AND THE PREVALENCE OF DISEASES, FROM AUGUST 1ST TO DEC. 1ST, 1865.

By N. S. DAVIS, M.D., Prof. Practical Medicine, Chicago Medical College.

Read to the Chicago Medical Society, December 22d, 1865.

The last report in relation to the prevalence of disease in this city, made by the undersigned committee, ended with the 1st of August. The present is simply a continuation, from the 1st of August to the 1st of December. From the 1st to the 26th of August, the atmospheric or meteorological conditions were similar to those of the last half of July, viz., cold and wet, with a prevalence of winds from the north, north-west, and north-east. During the first eleven days of the month, the rain storms were very severe, amounting in several localities in Wisconsin, Northern and Middle Illinois, and at South Bend, Indi-

ana, to tornadoes of sufficient force to destroy crops and unroof houses. From the 1st to the 27th of the month, there were not three successive days of ordinarily hot summer weather, with winds from the south or south-west. During the same period of time, there occurred but few attacks of diarrhœa or cholera-morbus; but dysentery and typhoid fever continued quite prevalent, the latter, more especially, during the last half of the month. From the 15th to the 19th, the weather was clear and dry, but unusually cold for the season of the year, and was accompanied by a large number of cases of catarrhal irritation, with severe cough and soreness in the chest. Many of the cases of continued fever were severe, and presented more of the characteristics of typhus than of enteric typhoid fever. During the last four days of the month, the atmosphere became hot and oppressive, with winds from the south and south-west. The same characteristics were predominant during the first half of September. This was accompanied by a marked increase in the attacks of serous diarrhœa, both in children and adults.

Some of these attacks of bowel-affection, like those occurring during the first week in July, were severe, and presented symptoms much resembling epidemic cholera, such as rice water discharges, sunken eyes, huskiness of voice, small and weak pulse, with muscular cramps. But the large majority of cases were mild. From the middle of September to the 1st of December, the weather was unusually dry, pleasant, and cool.

Continued fevers, that began to be quite prevalent during the latter part of August, increased in frequency and severity during September and October; and after the two weeks of hot Summer weather, ending with the second week in September, true malarious fevers, both of the intermittent and remittent types, prevailed to a moderate extent, but decidedly more than for several years previously.

The unusual influence of malaria, as a morbific agent, was seen in the exacerbating character of many of the cases of typhoid and typhus. During the two months last named, it was very common to meet with cases of fever that had been ushered in with a chill, and which would be characterized, dur-

ing the first four or five days, by such distinct exacerbations and remissions as to induce the medical attendant to regard them as true cases of periodical fever, and, consequently, to administer quinine in efficient anti-periodic doses. Instead of arresting the progress of the disease, however, it only lessened the distinctness of the exacerbations, while the fever continued, and, during the second week, developed fully the characteristic phenomena of typhoid or typhus. The unusual indications of the influence of malaria in producing periodical fevers, and modifying the symptoms of the early stage of many cases of the continued type, has not been limited to this city, but has been general over the North-west. At least, such has been the representation of correspondents from various localities in the interior.

After the middle of September, the prevalence of bowel-affections rapidly diminished, while another disease of a severe character began decidedly to increase, especially in the south-western portion of the city. We allude to a modified form of diphtheria and diphtheritic croup. It attacked children much more frequently than adults, though the latter were not wholly exempt. In a large majority of cases, the disease commenced obscurely, and with apparent mildness. The child would appear fretful and peevish, with slight feverishness for four or five days, during which the urinary secretion was generally scanty, and the bowels moderately loose, though sometimes the reverse. When loose, the discharges were generally semi-fluid and very offensive to the smell, coupled with a loss of appetite. Soon, there would commence an unusual flow of saliva, with slight swelling of one or both cheeks, and also of the salivary glands. On examining the mouth and fauces, usually the inside of the swollen cheek, the tonsils, and, sometimes, the edges of the tongue would be seen dark-red, swollen, and the mucous membrane more or less ulcerated, but very rarely more than the slightest traces of diphtheritic exudation or false membrane. The disease, thus developed, would often continue to increase, until the cheeks, sub-maxillary, and parotic regions were much swollen, and the inflamed spots in the mouth and fauces covered

with ragged and extensive ulcerations, causing the saliva and breath to be fœtid, and the deglutition to be difficult. In the meantime, the patient manifests much languor and debility, with a soft and weak pulse, and a distinct increase of febrile action during the evening and first half of the night. In a few instances, during the second week, a slight exanthematous rash was noticed on the skin, and, at a later period, purple spots on the lower extremities, and an œdematous swelling of the tops of the feet. After two or three weeks, a majority of the cases began slowly to convalesce, and ultimately recovered. In a considerable proportion of the cases, however, after the first week, the local inflammation invaded the larynx, inducing all the well-characterized symptoms of diphtheritic croup, and causing a fatal result in from one to three days. In a smaller number of cases, the disease attacked the larynx primarily, inducing the ordinary symptoms of croup, with some tumefaction in the parotid and sub-maxillary regions, and death by suffocation in from 12 to 72 hours. These cases differed in their symptoms from ordinary inflammatory and pseudo-membranous laryngitis or croup, in the lower grade of febrile action, the softer and weaker pulse, and in the tumefaction of the glands in the parotid and sub-maxillary spaces.

Most of the cases of diphtheria observed during the past autumn, differed, in some important respects, from the same disease as it prevailed epidemically in this city, and many parts of the country, five or six years since. In the cases that have come under my observation this season, there has been much less white diphtheritic exudation upon the mucous membrane of the mouth and fauces, and a greater tendency to irritable, phagadænic or spreading ulceration. In a much greater number of cases, there have been observed, this season, œdematous swellings of the feet, with purpuric spots on the legs, especially when the disease ran a protracted course. One case, that occurred recently, on South Union Street, near Bunker, presented some symptoms so peculiar that a brief description may not be devoid of interest. The patient was a young man, native of Ireland, and usually enjoying good health. In the latter

part of November, he had one or two teeth filled by a dentist. In about four days after, the throat and mouth were attacked with inflammation, and speedily became covered with a thick, white, tenacious, diphtheritic exudation. The swelling extended so rapidly to all the tissues in the front and lateral parts of the neck and the face below the forehead, that when I visited him, the third day, the nose, lips, cheeks, chin, sub-lingual, submaxillary, and parotid regions were swelled to such a degree, that the skin was shining and tense, the eyelids nearly closed, the jaws fixed or capable of being separated not more than a quarter of an inch, and all the tissues affected, extremely dense or unyielding to pressure. So far as the mouth and fauces could be seen through the limited opening of the jaws, the buccal mucous membrane was covered with a white, membranous exudation, with considerable tenacious mucus rattling in the fauces, and some difficulty of deglutition. But, while the interior of the mouth thus presented the well-marked appearances of diphtheria, the color of the skin over the nose, lips, and cheeks was that of a dark erysipelatous redness, with several small vesicles upon one cheek. The pulse was moderately full, but soft and frequent; the breathing noisy from mucus in the fauces, but not difficult; the mental faculties dull, and sometimes wandering; the urine scanty, and depositing a reddish sediment, and the intestinal discharges natural. In this case, we certainly had the union or intermingling of the symptoms of both diphtheria and erysipelas. During the first four days, the patient was treated with permanganate of potassa, one grain to the ounce of water, of which a tablespoonful was given every two hours, and a wash for the mouth and throat, consisting of chlorate potassa, one and a-half drachms, tinct. belladonna, three drachms, and hydrochloric acid, fifteen drops, in four ounces of water. During these four days, the local inflammation abated, the tissues of the face and neck became softer, and some of the diphtheritic coating in the mouth became detached, but his pulse became weaker, his mind more wandering, and he was much annoyed by a harassing cough, apparently from the constant accumulation of mucus in the pharynx. The permanganate

of potassa was discontinued, and twenty drops of the tincture of chloride of iron given in its place, while the cough and restlessness was allayed by a teaspoonful of the following solution every four or six hours, viz.:—

℞. Muriate of Ammonia,---------- ℥iij.
Iodide Potassa,---------- ℥ij.
Sulph. Morph.,---------- 3 grs.
Syrup Liquorice,---------- ℥iv.

Mix.

The swollen parts of the face and neck were also wet with the following liniment every four or five hours, viz.:—

℞. Camph. Soap Lin.,---------- ℥iij.
Tinct. Iodine,---------- ℥j.

Mix.

Under this treatment, aided by beef-tea, chicken broth, milk porridge, &c., for nourishment, the swelling and hardness of tissues gradually subsided; the exudations and redness disappeared from the lining of the mouth and fauces; and in about two weeks from the commencement of the attack, the patient was so far recovered as to be able to return to his home, in LaSalle.

That diphtheria, of a decidedly asthenic character, has prevailed to a considerable extent during the last three or four months, chiefly in the south-west part of the city, there can be no doubt. But the great tendency on the part of the people and of some members of the profession, to confound all cases of catarrhal angina, tonsilitis, and inflammatory croup, together with true diphtheria, under the latter title, renders it impossible to make even a proximate estimate of the number of cases in any given month.

That bowel-affections, continued fevers, and diphtheria have prevailed about in the order set forth in the preceding pages of this report, is corroborated by the imperfect statistics of mortality furnished by the health-officer of the city. Thus, in August, the whole number of deaths was 464, of which 200 were represented as having resulted from bowel-affections, 21 from continued fevers, 9 from diphtheria, and 8 from croup.

In September, the whole number of deaths was 346, of which 108 were from bowel-affections, 24 from continued fevers, 11 from diphtheria, and 14 from croup. In October, the whole number of deaths was 360, of which 45 were from bowel-affections, 28 from continued fevers, 36 from diphtheria, and 40 from croup. In November, the whole number of deaths was reported to be 299, but no details are given in regard to the supposed causes of death. It will be observed that the number of deaths attributed to diphtheria and croup in October, was three times greater than in either of the preceding months; and we think the number in November was not much less.

The south-western part of the city, where a large majority of the cases of diphtheria and croup occurred during the months of October and November, is occupied almost wholly by the laboring classes, and the streets not only have no sewers, but even the roadside ditches are almost constantly filled with slop-water, garbage, and mud.

We have associated diphtheria and croup together, because personal observation has satisfied us that full half of the deaths attributed to croup were from diphtheria extending into the larynx. It is to be regretted that practitioners and writers have not maintained a more constant and definite distinction between these two diseases. Inflammatory croup, or laryngitis, is a simple local inflammation, as much so as tonsilitis, pneumonia, or pleurisy. It is never accompanied by swelling of the glands of the neck; diphtheritic exudations upon cut or abraded surfaces in other parts of the body, and fœtid breath; or followed by albuminuria, dropsy, or paralysis; all of which, however, are the common accompaniments or sequelæ of diphtheria. Hence, the latter is a general disease, involving, primarily, a morbid condition of the blood and of the vital properties of the tissues, with a constant tendency to develope a specific grade of local inflammation, most frequently in the fauces and glands of the neck, but which may be developed in almost any of the membranous structures of the body. Consequently, there is the same propriety in maintaining the distinction between laryngitis or inflammatory croup, and diphtheria accompanied

by specific inflammation in the larynx, as there is between simple tonsilitis and scarlatina accompanied by anginose symptoms. In regard to the special pathology and treatment of diphtheria, there is yet much to be learned. To be told that it is a blood disease, or dependent upon a blood poison, affords us but little satisfaction or profit, so long as we are left wholly in the dark in regard to the nature of the morbid condition of the blood, or of the poison that is supposed to pervade it. That the blood is in a morbid condition, all the general symptoms, as well as the exudations upon inflamed surfaces, clearly attest. But is such morbid condition consequent on the introduction of some subtle poison from without, or on some primary change in the properties of the organized structures by which the processes of disintegration are altered and their products returned into the blood in such condition as to render the whole mass morbid? The latter supposition appears to me much more in consonance with all the facts belonging to the history, symptoms, and consequences of the disease than the former. That we have diphtheritic and true plastic, or pseudo-membranous, exudations in two widely different, if not opposite, conditions of the blood and vit properties, is evident from well-known pathological facts. Thus, the infant, in the first few days of its existence, if it fails to have a good supply of milk, and its nutritive processes fail to become established and active, will generally have its mouth, tongue, and fauces all covered with a white diphtheritic or curdy exudation. The adult, in the last stages of chronic disease, consumption for instance, when the tissues are wasted, and the function of nutrition nearly suspended, will often have a copious white exudation over the greater part of the mucous membrane of the mouth and fauces. Certainly, no one would regard the exudation in such cases as dependent on any extraneous poison imbibed into the blood, or upon any true plasticity of that fluid. On the contrary, it is clearly the result of an extremely asthenic condition of the system, with deficiency of such constituents of the blood as naturally retain the albuminous and fibrinous constituents in a soluble state. I believe

that the exudations in true diphtheria result from strictly analogous morbid conditions.

That the disease is decidedly asthenic in its nature, is claimed by almost all writers on the subject, and generally assented to by the profession. That this asthenic state depends on, or consists in, deficiency of certain elements of the blood, coupled with a depressed and perverted state of vital affinity, I am fully satisfied, although I am not yet prepared to point out the exact elements at fault. The exudations in diphtheria and other asthenic conditions of the system differ in four important particulars from the true plastic or pseudo-membranous exudations resulting from simple acute inflammation. First, they appear and disappear with great rapidity, often several times during the same sickness. Second, they are accompanied by a tendency to sanious and offensive discharges from, and often ulcerations of, the membranes on which they appear. Third, the diphtheritic exudation itself, as seen under the microscope, presents cells of smaller size, arranged more in rows, and more resembling pus cells or globules, than the plastic exudations of simple inflammation. Fourth, the diphtheritic exudations all tend to ultimate dissolution, while the plastic exudations of simple inflammation tend to completeness of organization, and often become permanently identified with the original tissues.

If the foregoing statements are correct, they leave no room for doubts in regard to the propriety of maintaining a clear distinction between diphtheria complicated with specific inflammation of the larynx, and simple laryngitis or inflammatory croup. They are not only diverse in their pathology, but equally so in the indications they present for remedial treatment—the one requiring tonics, restoratives, and nutrients, the other, depletives, alteratives, and abstinence.

For nearly 30 years, we have been in the habit of meeting a greater or less number of cases of acute laryngitis or croup during the cold part of every year, and we have regarded the prompt administration of an emetic, followed by leeches to the neck, mercurial alteratives, alkaline nauseants, and such agents as speedily lessen the plasticity of the blood and the morbid

sensitiveness of the solids, as affording the only reasonable hope of effecting a resolution of the inflammation, and ensuring the safety of the patient. But whoever applies the same remedies to the treatment of diphtheria, whether accompanied by exudadations in the fauces, larynx, or elsewhere, will certainly have no reason to boast of his success in restoring the health of his patients. On the contrary, in the early stage of the latter disease, we must endeavor to correct the depraved condition of the blood, increase its capacity for the absorption of oxygen, and sustain the vital affinity of the tissues by the free use of permanganate of potassa, or the chlorates of potassa and soda acidulated with hydrochloric acid, followed, in the latter stages, by the tincture of the chloride of iron, quinine, &c., with the inhalation of such vapors as tend to allay irritation of the mucous membranes, and dissolve the adherent exudations. Bland and simple nourishment must also be carefully administered throughout the whole course of the disease.

The object of this report, however, is simply to give a history of the prevalence of diseases and their connection with atmospheric and local causes, and not a discussion of their pathology or treatment. Throughout, the month of November was unusually mild and dry, and the prevalence of diphtheria and continued fevers declined both in number and severity. Hence, that month gave a gross mortality of 61 less than the preceding month. In our previous report to this Society, attention was called to the fact that we have no reliable register of the causes of death in our city. In view of expected epidemics of a certain character during the coming Spring and Summer, these statistics become of very great importance, and it is to be hoped that the Society will take immediate measures to bring about the necessary action of the city authorities.

All of which is respectfully submitted.

Selections.

SOME OBSERVATIONS ON BLOOD DISEASES.

By EDWARD B. STEVENS, M.D., of Cincinnati.

[From the Transactions of the Ohio State Medical Society.]

It is not the purpose of the present paper to present a systematic essay on those diseases which are supposed to be associated with a poiscned condition of the blood; but rather such reflections on the whole subject as may serve to present with fairness some of the most prominent points of doctrine now entertained. To go beyond this would require a maturity of investigation that few of us dare aspire to. Indeed, the more carefully we pursue our researches upon these points, the less inclined we are to express our opinions dogmatically.

Two extreme schools in medical opinion have always prevailed as to the general pathology of morbid impressions; and two extremes of therapeutics, to a certain extent, correspond with our pathology; and thus, as we lean in our educational prejudices, to *humoralism* or *solidism*, we are very apt to become wedded to ideas of one or the other direction of thought, provoking a disposition to make light of all views not set to our peculiar theory, and rendering us forgetful of that which now seems the most satisfactory view, that there are varied means of receiving morbid impressions, and that there are varied directions toward which we should apply our therapeutical agencies.

In the present state of our physiology, we suppose the constitution of the blood, its office, and the supply of its elements are pretty generally agreed upon. Through the medium of that fluid, nutriment for the general supply of the system and for the constant repair of each individual tissue is steadily afforded. The blood not only is the machine which matures and prepares these elementary materials, it also is its own disbursing agent, whose unerring instinct bestows upon each needy individual exactly its requisite material.

Now, in health there is a tendency to a certain consent standard, of uniform constituency in the composition of the blood, and yet various circumstances may modify the relative proportion of its elements to a certain extent, without producing any manifest effect on the state of the organism which can really be

regarded as pathological. Diet, exercise, hunger, exposure, and a variety of constantly changing circumstances, may give a large amount of red corpuscles, or an increase of fibrin, or an excess of water, etc., etc., and yet the health of the individual not undergo any speedy marked detriment. There would seem to be certain, not very clearly understood, compensating elements of control in the system, which for a time enables it to resist these constantly occurring vibrations from what might be supposed to be a healthy standard.

On the other hand, we are remarkably impressed with the fact of how slight a change in the normal arrangement and proportion of the elements of the blood may initiate the most serious morbid processes, and secure the most fatal results.

Furthermore, it is to be borne in mind that not all deviations from a normal standard of the blood, associated with morbid conditions of the system in any of its organism, are by any means to be regarded as *true blood diseases*. That the blood is lacking in its proper elements, or there is a disproportion in their arrangement, or there is a foreign element present, does not necessarily imply that the deceased condition of the system is the result. The state of the blood may happen as a regular link in the chain of morbid processes otherwise progressing; and here is apt to be one fault that from one instance or group of facts, we are so prone to generalize. The remark, however, suggests to us to look at the blood as a diseased structure from several aspects; and we shall do this all the more satisfactorily to ourselves if we fortunately happen to have no established theories to control *us*, or be themselves unsettled.

(*Food.*) In our reflections upon this subject, we are by no means to forget the relation of food to the blood condition; for while it is true that very many apparently and actually diverse elements of diet seem to afford a sufficiently uniform state of the blood, yet the instinctive capacities of appropriation and assimilation will not meet every embarrassment. The bee hovers over the sweetest clover fields and the most filthy cesspool, and her honey sac is yet abundant in its pure secretion. So, too, the digestive apparatus of man elects from a wonderful variety of substances the elements which finally become converted into the uniform blood structure. Nevertheless, we observe after all that certain laws do hold, and will not suffer to be lightly regarded or trifled with.

Thus, for example we find that there is a necessity for regular supplies of fluid. If a man be entirely deprived of water for eight or ten hours, there follows exhaustion in a marked

degree, while he may pass the same length of time without solid food without any serious or special inconvenience. So, too, the experiments of physiologists have shown that animals supplied alone with water live several days longer than those supplied alone with solid food. We do not propose in the present paper to discuss the philosophy of these facts, but simply allude to them as links in the chain of facts, illustrative of the vitality afforded through the blood-status; but this being the recognized vehicle whereby nutriment finds its ways to the tissues no circumstances must be permitted to vitiate its elements. *Chloride of sodium* is one of the inorganic materials which require to be afforded with very considerable regularity; and certain well known pathological conditions are manifested with the deprivation. In the natural history of this food question, the natural craving of the human species for vegetable food, whereby the starchy or saccharine elements are afforded, as also the desire for oleagenous food, becomes highly suggestive, taken in connection with the reflections we are engaged in considering. So far as the craving for vegetables is concerned, it is found that even in certain pathological states, as for example in diabetes where a strictly animal diet has been persisted in as a means of therapeutics, yet very soon the instinctive craving becomes too imperative to be overlooked, and the treatment is abandoned.

Certain products of the blood, which we must confess, however, are not very well understood, are materially influenced by the character of the food. Of these are urea, the urates, carbonic acid, and the excretions generally. And indeed this is true whether we regard these as products of the blood direct, or results of disintegration, or whatever theory we may adopt.

Now, bearing in mind these well known elements of a healthy blood constitution, crudely expressed as they are, it requires no elaboration of facts or illustration to suggest the subtle influence of improper diet, or want of diet, or irregular diet, of bad air, of deranged or arrested eliminating function, together with an endless list of occurrences or circumstances which will by some of its processes materially change the blood in one of at least three ways: viz., an excess of natural elements, a loss of natural elements, the introduction of various unusual or foreign elements.

Either of these conditions of abnormal constitution are manifestations of blood disease, or speedily provocative of blood disease.

In the whole range of therapeutical agents, we have no more

interesting group of study than those remedies which from their supposed peculiar action are styled *Restoratives* and *Catalytics*.

That a great variety of medicines, when administered, produce more or less important modifications in the blood, seems now too well established to require any elaboration in such a paper as this. Whether they act through the blood directly or by virtue of some indirect sympathetic influence is also immaterial to our present purpose. What we most wish to know is that medicines do change the character of the blood and through this structure affect all the other structures of the system. Mr. Headland, in his excellent book, regards all these remedies as acting in the blood, that they pass into the blood, and produce their influence there. He styles them *Hæmatics*.

It is certainly not very difficult to understand that a great many diseases arise simply from a want of some one or more of the normal constituents of the blood. That this is the case in simple debility, would appear plain enough. We are quite agreed that anæmia occurs from a deficiency of the hæmatosin of the blood corpuscles. Certain diseases are associated with a lack of the salts of potash. In malignant cholera there is an absence of the watery particles of the blood. Some forms of urinary disease are manifested by their peculiar urinary deposits—here there is probably a deficiency in the elements of the blood whose office is to hold these elements in solution. We have thus suggested a wide range of pathological condition, in which there is some defect in the blood elements. Medicines which supply this defect serve to restore a correct condition of the faulty functions, hence we style them Restoratives. We must not in this connection lose sight of the distinction—all this class of agencies are not in any sense eliminators of any vice—they do not necessarily pass out of the blood, they afford to it something wanting from its healthy condition. And in this sense, *articles of food* become in the highest sense restoratives. They stand at the head of the class, and with the whole train of hygienic influences, are our first resources.

Some years ago, a distinguished fellow member of this Society read a Prize Essay to this body on *Essential Fevers*, in which he elaborated very fully and clearly the doctrine of foreign elements as the origin of certain putrid fevers. It is known that the normal condition of the blood is alkaline. Carbonate of soda is one of the healthy constituents, and recently Dr. B. W. Richardson has pretty well established the coagulability of the blood as dependent on the escape of ammonia (or its carbonate.) Now there is very fair reason to believe that typhoid fever, and

other low forms of fever, especially all that class of fevers known as "putrid fevers" are dependant on an excess of some of these alkaline elements. Thus, for example, Dr. Blair has shown that in the yellow fever there is an excess of the alkali of the blood, and that this alkali is the ammonia. At any rate, therapeutically there it no doubt but acids are of marked service as remedies in the treatment of these fevers, as the empirical experience of the profession ascertained long ago. More than a hundred years ago (in 1750,) Huxham recommended the mineral acids in the treatment of "putrid crasis" in fevers. And in our time a favorite treatment of scarlatina is the administration of nitric acid.

There is some dispute whether the acid of the gastric juice be the hydrochloric or lactic, the former is generally supposed. Now in many cases of weak digestion the administration of an acid has acted as a stimulous or promoter of the function. The explanation seems to be that a larger amount of acid is set free in the blood, thereby counteracting the failure of gastric secretion upon which these dyspeptic conditions depend. For similar reasons some forms of diarrhœa are relieved by acids.

Similar processes of reasoning are applicable to many other natural elements of the blood, and their naturally suggested restoratives, as alkalies, tonics, preparations of iron, and perhaps some other classes of agents.

"When a disease depends on the want of some material in the blood system, then it admits of being cured by a restorative. When a morbid process results in a diminution of the amount in the blood of some necessary constituent, then also may a restoration be of use in alleviating the consequences of such a disorder."—*Headland, Hæmatics.*

There is another branch of this subject, containing a proposition, to which the profession has given its assent, after some mode, through all ages; and yet for which there is even to this day no very definite demonstration, and to which there is, with many eminent authorities of medicine, the most virulent unrelenting skepticism and warfare.

It is common to ascribe to certain peculiar remedies certain important specific offices in the human economy, for example, *mercury* is, after all that has been said, still esteemed as the antagonist of syphilis; arsenic of lepra; and iodine of scrofula. We have never been able yet to say how these medicines produce their specific action, we simply know that they have the power to antagonize particular pathological conditions.

In the obscurity which has ever surrounded the *modus oper-*

andi of these and other remedies, it has been the theory to regard them as acting through the blood. That certain *materies morbi* are working in the blood, of which the vital tendency is to pass out by the gradual processes of functional elimination, and that for particular forms of foreign matters thus existing in the blood, there are respectively certain appropriate antagonizing agents. Now, we say that the demonstrations of these subtle processes are by no means clear, yet it is difficult otherwise to satisfactorily account for an extended list of phenomena in the natural history of disease and therapeutics.

In the valuable prize essay of Prof. Armor, already referred to in this paper, the class of diseases resulting from these peculiar toxic conditions of the blood are styled zymotic, and writers generally have used this term, and remedies which antagonize these poisons are spoken of as *catalytics*.

Now I say there has been some very similar way of expressing this idea from the earliest times to now. What a wonderful similarity in the old doctrines of Hippocrates, his coction or fermentation, and critical days, with the fancy of Liebig, who compares the history of these blood disorders to the process which takes place when a small quantity of yeast is introduced into a mass of malt (or sweet wort.)

Yeast, as every scientific person knows, is a vegetable fungus; placed in a solution of sugar, it undergoes rapid development, and as a consequence, alcoholic fermentation takes place, the elements of sugar arrange themselves in the new and simple forms of alcohol and carbonic acid; but in the malt there is another element, the gluten; and this gives rise to another peculiar manifestation, the yeast multiplies itself enormously at the expense of the gluten, and when the process is completed there is twenty or thirty times as much yeast as there was placed in the malt at the beginning. Now, Liebig uses this process to illustrate the events which take place when a toxic element finds its way into the blood. He believes that by some mysterious operation resembling (*not the same*,) but resembling the yeast fermentation and growth, when a portion of the poison of smallpox, or scarlatina, or diphtheria, or syphilis finds a lodgment in the blood it may so act upon the usual elements, or upon some peculiar elements of that fluid, as to reproduce itself indefinitely. To effect this reproduction, just as the yeast requires the gluten, the toxic element must have its elementary affinity present upon which to react, otherwise there is no increase, there may or may not be some disturbance of the economy, and there is by and by elimination. If the required

element be present, the process goes on, and new relations are established kindred to fermentation; in proportion to the importance of this element, as a material of tissue life and growth, will be the degree of disturbance produced; if the element is concerned in vital operations, then the toxic condition overwhelms the system and proves more or less rapidly fatal, as we are to suppose, according to the concentration of the poison.

The doctrine of typical changes so beautifully elaborated by Mr. Paget, is really only another way of expressing a similar theory. He likens the process of change which occurs in the pathological history of a typhus fever, or a small-pox, or any of those, what are styled zymotic diseases, to the changed formative process seen in a scar, or other changed tissue. A new elementary disposition has occurred, a new type, and thereafter the formative process proceeds after the new order, and hence as he supposes, the immunity thenceforth, to the influence of this toxic element if reintroduced into the blood; that is to say, the gluten type of Mr. Liebig has been destroyed and the new formative process ceases to produce it. So, too, Simon and other eminent pathologists present their special explanations of the events which we know to occur, and when analyzed, there is still the old "crisis," and "coction," and "humoral poison" of that great philosophor and physician, Hippocrates.

The pertinacity with which these ideas have retained their hold on the philosophy of medicine suggests a large degree of respectful attention, as if not absolutely true or demonstrated to be true, yet as probably on the right track.

These ideas have naturally suggested many important therapeutical views and experiments, of great value practically. The idea of a toxic condition at once suggests its antagonist; and when, on the one hand, we observe the natural history of acute rheumatism to require a definite period, expressed by Abernethy as "six weeks," to pass through its process of coction, its crisis, and its decadence, oftentimes this natural history indefinitely extended, with its incidents of chalky deposits and the like, *when undisturbed.* And on the other, when a course of alkaline medication on the plan of Mr. Fuller has arrested the process of disorder in a few days, we find it very difficult to divest ourselves of a corresponding theory.

In like manner we find very strong circumstantial evidences of toxic processes in such diseases as erysipelas, uræmic intoxication, septicemia, and the like. Exactly what blood changes have taken place in tubercle and scrofula; in putrid fevers; in the lengthy catalogue of cutaneous diseases, perhaps we shall not

be permitted to know. But the therapeutical suggestions and experiences which are accumulating in this field of inquiry are most fascinating in interest, and of the highest practical importance. It had been our purpose to embrace the consideration of some of these topics in the present paper, but the *resume* of the points already submitted have drawn more on the patience of the Society than was expected, and if agreeable, it will be my pleasure on a future occasion to prepare a supplementary paper, embracing some review of the more important topics to be considered under the general idea of *The Recent Therapeutics of Zymosis* or *Catalytic Diseases.*

CLINICAL OBSERVATIONS ON DISEASES OF THE RECTUM.

By JAMES R. LANE, F.R.C.S.,
Surgeon to St. Mary's and Lock Hospitals, and to St. Mark's Hospital for Diseases of the Rectum.

ON THE ALLEGED DANGERS OF THE LIGATURE IN THE OPERATION FOR HÆMORRHOIDS; AND THE COMPARATIVE MERITS OF THE TREATMENT BY THE CLAMP AND BY THE LIGATURE.

There is perhaps no operation in the whole range of surgery which affords so much relief at so small a cost of suffering and risk as the removal of hæmorrhoical tumors by the well-known and long-established operation with the ligature. Nevertheless there appears still to be, on the part of the public, and even of many members of the medical profession, a sort of undefined dread of ill consequences arising from it; the result of which is, that many persons are induced to linger on for years in misery and discomfort, when surgery is capable of affording them complete and permanent relief, at a risk scarcely greater than they are constantly incurring in the ordinary affairs of life.

A good illustration of what I state has been recently afforded me in the case of a young officer, who had spent some years in India, and who was suffering from the disease in its most aggravated form. It completely incompacitated him for his duties, and compelled him to return to this country for treatment. When I saw him he had been here more than a year, but had nothing done, because he had been told by a physician of eminence, whom he consulted, that it would cost him his life if he allowed himself to be meddled with. He was otherwise in fair health, and could discover nothing in his case to contra-

indicate an operation. I therefore persuaded him to submit, and the consequence was that he recovered without any untoward symptom, and was quite well at the end of a fortnight.

I have no doubt that to the existence of this vague impression might be traced the introduction of nitric acid in the treatment of this disease; and now, since experience has shown this remedy to be quite inadequate to the cure of the complaint in its severer forms, and only applicable to a small and exceptional class of cases, I believe we owe to a similar cause the introduction of a new operation with a clamp and the actual cautery. This method has been persistently vaunted during the last two or three years, as affording a certain means of cure combined with a complete immunity from all those indefinite ills to which the ligature has been stated to give rise. I have no wish to depreciate this new operation, which is ingenious enough, and may, I doubt not, be found effectual, though I do not believe it to be better, and there is not a shadow of proof that it is safer, than the methods previously in use. I cannot, however, refrain from expressing my opinion that its author, Mr. H. Smith, has exceeded the limits even of parental partiality, in the way in which he has attempted to build up its reputation at the expense of the fair fame of our old and tried friend, the ligature.

The operation to which I allude is performed in this wise. The hæmorrhoidal tumors being protruded, they are seized and their basis firmly compressed with a clamp. They are then cut off, and, to prevent bleeding, the cut surface is cauterized, either with nitric acid or the hot iron, the latter having been found the more effectual. The clamp is then removed, and the cut surface, covered of course by the layer of slough produced by the cautery, is allowed to recede into its place within the rectum. Any external piles which may happen to be present are then cut away with the knife or scissors.

Shortly after the introduction of this plan of operation, we were told by Mr. Smith, in some clinical remarks, that, "admirable as was the method of treating these diseases by the ligature, it was not free from danger to life; and if the surgeon possessed some means equally effectual, and yet free from dangerous consequences, he is bound to employ them; and therefore he was glad to be able to recommend, in the strongest manner, the improved clamp," &c. Shortly afterwards, I read that by this method "the dangers of the ligature are entirely avoided." And more recently I have met with the following statement:— "It is impossible for any surgeon conscientiously to tell his patient that there is no danger whatever after the ligature; but

this may be *most truthfully stated* with regard to the operation by my improved clamp; if the most ordinary precautions are taken to prevent bleeding." Again: It is *not possible* that either tetanus or pyæmia, the two most formidable results of the ligature, can occur after this operation, because the condition which produces the former affection does not obtain—viz., the presence of and irritating substance around the nerves for several days; and pyæmia, or other inflammatory affections, will be effectually prevented by the exposed surface being deprived of its vitality, and the veins being blocked up by the cauterization." The pathological views enunciated in the paragraph last quoted are of so novel and startling a character that they impel one to ask whether tetanus has hitherto been unheard of after burns, and how long the application of the actual cautery to cut surfaces has been known to be an effectual guarantee against pæymia and "other inflammatory affections." In the interests of science, and for the credit of English surgery, I cannot help entering my protest against such reckless assertions as these, unsubstantiated as they are by a shadow of logical proof, and without even the slender recommendation of *a priori* probability to sustain them.

But what is the *real* state of the case as regards the consequences of the operation with the ligature, deducible from the experience of those who have had the largest opportunities of forming a judgment on such a matter? The following quotation from the writings of Sir B. Brodie must commend itself to everyone by its plain common sense and sound judgment. He says:—"I conceive this is not only one of the most effectual, but one of the safest operations in surgery. I should think I must have performed or seen it performed between 200 and 300 times. I saw one patient who died after the operation, in consequence of diffuse inflammation of the cellular membrane running up the inside of the gut as high as the mesentery, but that was a patient whose constitution was broken down by long-continued hæmorrhage and in whom any slight accident might have produced equally bad consequences. I saw another patient who a week after the operation, and having been quite well in the interval, had an attack of pain in the abdomen and shivering, attended with fever and died------With the exception of these two cases, I never knew any ill consequences arise. I contend therefore that the operation is as safe as any operation can be expected to be. You are not to suppose that even the slightest operations in surgery are absolutely in all cases free from every particle of danger, any more than the slightest acci-

dent. I have known two patients die after the extraction of a tooth, and I have known several die in consequence of venesection of the arm, or an accidental prick of the finger. The chance of danger from this operation is at any rate so trifling that you need not calculate upon it. If you were to calculate upon so small a chance as this, you would scarcely be able to do anything in the ordinary affairs of life." Again, what is the opinion of the leading surgeon of the northern capital, who is well known to have had had for many years a most extensive practical experience in such cases. Mr. Syme says: "I feel warranted, after very extensive employment of the ligature, to state that it may be used without the slightest risk of any serious inconvenience. Indeed, in the whole course of my practice I never met with a case which terminated fatally, or threatened to do so, when the ligature simply was employed."

My own experience of the operation with the ligature amounts now to as many as 427 cases. In the immense majority the progress towards recovery has been singularly uniform. It has been rare indeed that I have met with any untoward symptoms, or that the healing has been much delayed; and I have never seen any cause for serious alarm, except in two cases which occurred more than seven years ago, and which have already been made public. The two cases to which I allude proved fatal from tetanus. They were lodged in the same ward, and were seized with tetanus on the same day, at a time when that complaint was epidemic in the hospitals of London to a remarkable, and I believe almost an unprecedented, extent. Out of the whole number of 427 cases which I have treated, I have never seen an instance of pæymia, or erysipelas, or of diffuse inflammation. Mr. Gowlland, my colleague at St. Mark's Hospital, must have operated on as nearly as possible the same number, his appointment to that institution having been made at the same time as my own, and I know that his experience is almost identical with mine on this question. He has never met with a case of pyæmia, and has had no fatal result, excepting, strange to say two cases of tetanus, which occurred within a short time of those to which I have already referred, and were fairly attributable to the influence of the same epidemic.

Tetanus and pyæmia, as we have seen are alleged to be "the two most formidable results of the operation with the ligature." With respect to tetanus, there is no doubt it will occasionally follow this, as it will also occasionally follow every conceivable surgical proceeding. By careful search in the medical journals it would not be difficult to find cases in support of such an

allegation against almost every operation in surgery, whether small or great. But I contend that there is no evidence that the ligature of hæmorrhoids has any special liability to produce this disease, and that there is no ground whatever for the statement that the inclusion of tissues in a ligature is a more probable exciting cause than the cauterization of the same tissues with the hot iron. In point of fact, burns have long been rather unfavorably known for their tendency to be followed by tetanus; therefore, in contrasting the cautery with the ligature, the inference to be drawn is certainly not to the disadvantage of the latter. The assertion that it is *not possible* for tetanus to follow the operation with the clamp and cautery is too absurd to require refutation, and equally so is the argument that an operation is exempt from an exceptional complication like this because twenty, fifty, or even a hundred cases have not furnished an example of it.

Again, with respect to pyæmia, it is to be feared that this is an occurrence from which no surgical operation will ever be able to claim complete exemption, especially in large hospitals. But all our knowledge on the subject tends to show that it depends on the health and condition of the individual patient, and on his atmosphere and other surroundings, rather than on the nature of the operation. It will be time enough to argue against the singular theory, that a slough produced by cautery are materially different in their predisposing influence, when any reliable facts are adduced in its support.

But I am in a position to assert confidently, and on positive grounds, that the operation with the ligature does *not* possess any peculiar liability to pyæmic infection. On the contrary, the reverse according to my experience has been remarkably the case, so much so that I have long been surprised at the exemption. I have the authentic testimony of 427 cases occurring in my own practice, and reliable information of about an equal number in the practice, of my colleague, thus making a total of about 850, and out of this large number not a single instance of pyæmia has been observed.

Having now shown, I trust conclusively, that there is no ground, either in reason or fact, for the assertions which have been made in favor of the clamp at the expense of the ligature, as regards immediate danger to life, I would ask to be permitted to examine some of the other grounds on which it has been pressed into public notice. We are told by the author of the operation "that it is not only on account of its far greater safety that he practises and strongly recommends the employ-

ment of his clamp in cases of internal hæmorrhoids and prolapse, but he adopts it for the additional and important reason, that the period of convalescence after this operation is rendered so brief that the patients are enabled to be up and about their business *in one-third of the time* which is of necessity consumed after the ordinary operation with the ligature." The majority of the patients are stated to have been "moving about" in four or five days, though in some it is admitted that the convalescence was protracted over a period of a fortnight or three weeks.

I am unable to speak from direct personal experience of the comparative merits of the two operations. I have not yet employed the clamp, in consequence of a scepticism, for which I trust I shall be pardoned, with regard to its alleged extraordinary merits, and also because it appears to me to possess the disadvantage of being more painful and protracted at the time, and of being, in severe cases, by no means certainly free from a liability to hæmorrhage subsequently. This liability, indeed, is evident from Mr. Smith's account of his own cases. I have, however, had the advantage of repeatedly seeing it performed by my colleague, Mr. Gowlland, who has used it in, I believe, about twenty cases. Having witnessed most of that gentleman's operations, I can testify to the careful and complete manner in which every detail was carried out. I have seen most of these cases after the operation, I have made particular inquiry respecting their progress, and I have found that there has not been, as a rule, less pain than after the other operation, nor has the convalescence been in any degree accelerated. They have not been considered fit to be discharged from the hospital in a less time than the average of other cases. My colleague, Mr. Allingham, informs me that he has operated with the clamp and cautery on fourteen cases, and he has arrived at precisely similar conclusions. I, therefore, take the liberty of demurring to the statement that the recovery will be complete in one-third of the time, and that patients will, as a rule, be able to go about their business in four or five days.

But I must also demur to that statement for the following additional reasons:—In the great majority of cases requiring operation there is more or less redundancy of the outer skin, "external piles," requiring removal. These must be cut away with the knife or scissors, whichever operation is adopted; and the sores resulting from their removal will render the majority of patients extremely averse, from "moving about" more than they can possibly help, at the end of four or five days. But

where the outer skin is not inflamed or redundant, and does not require to be interfered with, but the disease is altogether internal, and the parts admit of being resorted to their natural position with the sphincter, as soon as the operation is concluded,—in such cases, I contend, the patient will be quite as well able to "move about" after the one operation as after the other. Whether it is prudent to allow him to move about is another question. I am strongly of opinion that it is not; indeed in private practice I not unfrequently find it necessary to repress the tendency to do so, because I believe that where there are large sloughing sores in the interior of the rectum (whether produced by ligature or cautery it cannot matter one straw) it is of the first importance that rest and the recumbent position should be observed, at all events until healthy granulation has commenced. If this salutary rule is largely departed from, I venture to predict that untoward results will soon become more frequent, whether the operation be performed by the clamp or by the ligature.

But it has been also alleged as an argument against the ligature and in favor of the clamp, that sometimes "the wounds resulting from the separation of the ligatures would not heal up for a long period, and the patient would be subjected to much painful suffering, necessitating, perhaps, some other operation." According to my experience, cases of this kind are very uncommon, though I admit, of course, that they may occur; indeed, after any operation, out of a large number of cases, delay and obstinacy in the healing process must always be occasionally met with; but I would ask, on what conceivable surgical principle should such a result not be equally likely to follow the operation with the clamp and cautery. Wounds made with the cautery, on the outside of the body at all events, have never been noted for any peculiar rapidity in cicaterization.

I repeat that I have no desire to depreciate the operation with the clamp. I believe it to be a sufficiently effectual method of removing the disease, but I consider it to be in many respects inferior, and in no respect to have the advantage over, the operation with the ligature. It is, in truth, only another mode but a less certain and complete mode, of doing the same thing. I admit, however, that it is an immense step in advance over the treatment by nitric acid, with which the name of its author was some years since so much identified. I should never have thought of saying a word on the subject had the new operation been left to stand upon its own merits,

and had not comparison, which I consider to be unjustifiable and unfair, been made between the two operations. I should be delighted to welcome any *real* improvement in the treatment of this disease, but I cannot admit that this is likely to be effected by the clamp. On the other hand, I consider that the operation with the ligature has done incalculable service to humanity, and my belief is that it will continue to do so long after the clamp, like many other ingenious novelties, has been laid aside and forgotten.

In conclusion, I would add a few words respecting the best mode of operating with the ligature. The plan which I invariably adopt is that invented by Mr. Salmon, which is, in my opinion, far superior to any other. By means of it most of the objections which can fairly be urged against the ligature are obviated. The hemorrhoidal tumors being protruded, they are seized in succession with a hook or vulsellum, and are separated with the scissors from the subjacent parts, along the line of union between skin and mucous membrane. The cut made with the scissors should be sufficiently deep and free to detach the tumor from the muscular tissue on which it rests to an extent equal to about three-fourths of its base, leaving it attached by its upper fourth only. The ligature is placed in the deep groove thus made, and is tied tightly round the upper attached part. The danger of hemorrhage is securely provided against, because the vessels which supply the tumor do not enter it indiscriminately at its base, but descend from above beneath the mucous membrane, and their trunks are therefore necessarily included in the ligature. When the ligatures have been tied, the bulk of the tumors may be cut away, care being taken to leave sufficient tissue beyond the ligature to prevent it from slipping, and the parts may then be returned within the sphincter. Any redundancy of external skin which is apparent *after the parts have been returned* must be cut off with the scissors. This plan of operation is far preferable to the usual method of strangulating the whole base of the tumor by transfixing it with a needle, and tying it in two halves—first, because it is completed in less than half the time; secondly, because scarcely more than one-fourth the amount of tissue is strangulated by the ligature—indeed the ligature need not include much more than the trunks of the vessels supplying the tumor; thirdly, because the ligature is tied round mucous membrane at some distance from the anus, where the sensibility is much less acute, and consequently the after pain and irritation are very greatly diminished. Instead of the whole attached base of the tumor being

converted into a sloughing wound, as when the whole of it is included in the ligature (and equally, I might add, when the whole of it is burnt with the hot iron,) three-fourths of it is made into a simple incised wound with the scissors, and the sloughing process is confined to the upper fourth only.—*London Lancet.*

EXTRACTION OF HARD CATARACT.

By GUSTAVUS HAY, M.D.

Read before the Boston Society for Medical Improvement, and communicated for the *Boston Medical and Surgical Journal.*

The operation of extraction of cataract, even in cases in which the amount of success expected is sufficient to decidedly indicate the operation, presents considerable variety both as to the facility with which it is effected and as to its results. In conjunction with cataract the eye may be variously diseased and so altered that the lens may not slip out in the usual manner, and apart from the contingencies of the healing period the improvement in vision may be less than it would have been had the cataract been the only disease. We must not, however, attribute to disease in the eye what may be due to defect in the operation. Slight variations in the movement of the instruments, such as may very easily occur, become of considerable importance, owing to the minuteness of the parts, and may influence the result more or less favorably.

In illustration of the above, I have selected the following cases:—

Case I.—Mrs. E., American, æt. 57, healthy, entered the infirmary Oct. 2d, 1864. The right eye had begun to get dim three years previously; the cataract was apparently hard, and now nearly ripe. The left was noticed to be dim a year previously; its cataract also hard, but not quite ripe.

Oct. 5th.—The ordinary flap-extraction, downwards, was done on the right eye, without ether.

10th.—Patient sitting up.

18th.—Yesterday complained of slight pain. The pupil a little smaller than in the other eye. Atropine instilled.

31st.—Wound well healed. Pupil opposite the middle of the cornea, and nearly round in form. With convex 4, vision at twenty feet $\frac{1}{2\frac{1}{2}}$.

Nov. 1st.—With convex $3\frac{1}{2}$, vision is $\frac{1}{2}$.

Here we have a case which, with the exception of the slight irritation recorded Oct. 18th, proceeded without any disagreeable circumstances and resulted successfully; so that a month after the operation the patient could leave the infirmary, well. But such a favorable state of things is not the rule, at least not without numerous exceptions.

Case II.—Mrs. T., American, æt. 73, entered the infirmary Oct. 6th, 1865. Sight began to fail in the left eye four years ago, with pain, which had recurred at times ever since. The right began to fail half a year after the other. Patient now sees with each eye, large objects. Each lens is somewhat opaque in parts throughout, and shows a well-defined, small nucleus. Tension of eyes not increased.

Oct. 9th.—Iridectomy was done upwards on the left eye.

23d.—Under ether, an upper section of moderate size was made at the boundary between cornea and sclerotic, in the expectation that the small nucleus would easily pass out; but, after opening the anterior capsule, the lens refused to start. The section, though slightly smaller than usual, was yet thought to be sufficiently large. Some other method than the usual one must, then, be adopted. Schuft's spoon, it was thought, would endanger, by its too great size, a rupture of the hyaloid. Critchett's vectis spoon was preferred; but owing to its flatness, it had previously occurred to me that it would bring along the lens better if modified by the addition of a small oval opening, into which the convexity of the posterior surface of the lens might settle a little. Such an opening, 2 lines long and $1\frac{1}{2}$ lines broad, had therefore been made in the middle of the bowl of the spoon, the long axis of the opening coinciding with that of the spoon. This fenestrated spoon was introduced behind the lens, and with it the greater portion of the lens brought out without losing any vitreous. It was noticeable that, notwithstanding the appearance of a well-defined, small nucleus before the operation, yet after extraction the nucleus adhered rather firmly to the cortical portion.

Nov. 1st.—Some pain last night, and redness to-day.

13th.—Pain and redness have been considerable, but now diminishing. Sight improving.

21st.—Pain nearly gone; only slight redness remaining; with convex $3\frac{1}{2}$, has vision 1-10 at ten feet.

As causes for the lens not slipping out easily, Stellwag mentions a flap too small, or a section carried too flat through the cornea, a spasmodic contraction of the sphinctor pupillæ and posterior synechiæ. He does not mention an unusual degree

of adhesion between lens and capsule, which may have existed in the case just reported. As to the requisite of the section, he says:—"A section of half the circumference of the cornea is never necessary, even for large nuclear cataracts; it suffices to enter and come out somewhat under the horizontal diameter of the cornea, and to carry the knife so that the outer edge of the flap may be all along about a-quarter of a line distant from the limbus conjunctivalis. If the nucleus is small and the cortical softened, or even if the nucleus be somewhat larger, but of normal consistency, a flap is sufficient whose extent exceeds only a little a-third of the circumference of the cornea." This last is not strange if we remember that the average diameter of the lens, is four lines, and that of the cornea five lines; so that an arc of a-third of the circumference of the cornea would have a chord slightly greater than the diameter of the lens. Some additional length is generally wanted on account of the thickness of the lens.

Case III.—Mrs. T., æt. 68, American, in feeble health, entered the infirmary May 13th, 1864, with cataract of the left eye. Iridectomy was done upwards on the 14th. Patient left on the 6th of June, doing well.

Aug. 19th.—Came back. Since leaving has been ill some of the time, but better for the past six weeks. The right eye shows some lenticular opacity and small floating opacities in the viterous.

22d.—More than three months after the iridectomy, extraction was done upwards (under ether). Nucleus small.

25th.—Some pain. Lids very slightly swollen. Some conjunctival injection. Pupil dilated by yesterday's atropine. Compressive bandage continued. Atropine instilled. Weather very warm. May sit up.

27th.—Five days after operation. Conjunctiva somewhat swelled. Pupil dilated; its aperture in part of a cloudy, creamy hue. Compressive bandage omitted.

29th.—About the same, except appearance of pus in anterior chamber. Pain at times severe.

Sept. 10th.—Nineteen days from the operation. Œdema of upper lid increasing. For several days pus has shown itself near the aperture in the iris made by the iridectomy. Pupil still dilated.

27th.—Inflammation diminished. Occasional pain. Cornea slightly opaque. Pupil nearly closed. Opaque substance blocking up the artificial pupil and the natural one. Tension of globe diminished.

Oct. 2d.—Movable reddish fluid in anterior chamber. Tension much less than normal.

4th.—Patient left.

25th.—Came back. Tension restored somewhat. Reddish fluid absorbed. Cornea clear, except above in neighborhood of section. Pupil occupied by a whitish membrane.

Nov. 28th.—Iridectomy downwards and inwards.

Dec. 15th.—With convex $3\frac{1}{2}$, has vision 1-10 at ten feet.

1865, Oct. 6th.—Vision about the same, though on trial not quite as good as Dec. 15th, 1864.

This case is interesting as showing how tedious may sometimes be the inflammatory process after extraction, and also that notwithstanding very unpromising symptoms a useful amount of vision may sometimes be obtained. In consideration of the above case and of another similar one, in which the inflammatory mass occupying the pupil seemed continuous on the one hand with the edges of the artificial pupil, and on the other with the corneal section, the question occurred whether the inflammation might not be aggravated by the presence of this artificial pupil. Is it possible that this pupil, by allowing the inflamed lens-remnants to come in contact with the corneal section thereby promotes the transference of the inflammation from one to the other, or that the edges of the artificial pupil take on inflammation more readily than the rest of the surface of the iris? However, if we consider the morbid process in the two cases referred to as consisting in great part of inflammation of the portion of the lens remaining behind after extraction, it must be remembered that by means of the artificial pupil the extraction of the soft part of the lens is much facilitated. Setting this advantage of the iridectomy against the possible disadvantage referred to, there would still be reasons for considering flap-extraction preceded at an interval of some weeks by iridectomy as in general the easiest and safest method for ordinary hard cataract, inasmuch as by this method, with comparatively slight danger of rupturing the hyaloid, the removal of the lens is facilitated, and for a given amount of pressure on the eye a somewhat smaller section would suffice, and also rapid union is promoted. If the patient were quite infirm or restless, we might substitute for the usual section a smaller one of about a-third of the circumference of the cornea, and bring out the lens with the aid of the spoon, setting the advantage of the smaller section over against the danger from the use of the spoon.—*Boston Med. & Surg. Journal.*

OF THE TREATMET OF CROUP BY THE INHALATION OF LIME-WATER.

M. Kuchenmeister, of Dresden, has stated that diphtheritic membranes are rapidly dissolved in lime-water; and this statement has been confirmed by M. Biermer, the Professor of Clinical Medicine in the University of Berne, who has repeated the experiment before the students of his class.

The *Brit. For. Med. Chir. Review*, says that some pseudo-membraneous exudations, of considerable extent and thickness, were placed in a small glass of lime-water, and in the space of from ten to fifteen minutes, and before the eyes of the students, they disappeared, leaving only a very slight sediment at the bottom of the glass. M. Biermer was therefore induced to apply the lime-water locally in a living patient, and he has published the results, which were quite satisfactory. The patient was a girl, aged seventeen, admitted into the hospital of Berne for croup, which has lasted four days. When she was admitted, she was nearly choked, cyanotic, and insensible, and she threw up portions of membrane only by means of the administration of some very strong irritant medicines. The symptoms of laryngeal constriction still continued, together with distressing dyspnœa; and pulverized water was employed to moisten the respiratory passages. The water employed, which was at first hot, and then boiling, produced considerable amelioration; and M. Biermer, having previously tried the experiment mentioned above, with the false membrane and lime-water, supplied the pulverizer with lime-water. The improvement was evident as soon as the inhalations were commenced; the expectoration changed its character, and became purulent; the cough gradually disappeared, and the fever abated; and only hoarseness and a slight cough remained during the convalescence, which terminated in a complete cure. M. Biermer, and all those who watched the progress of the case, were convinced that the inhalations had a solvent effect upon the false membranes; but the professor does not recommend an exclusive adoption of this local treatment, which softens and detaches the exudations, but does not reach the cause of the disease, which must be combatted by constitutional remedies, calomel being considered the chief. The plan of M. Biermer has been followed by other practitioners; and M. Kuchenmeister has published a case of diphtheritic pharyngo-laryngitis in a child of three years and a-half old, treated in the same manner with complete success. Dr. Brauser, of Ratisbon, has also lately published a case of croup in a

child of four years and a-half old, treated in the same manner, and perfectly cured. M. Biermer insists particularly on the necessity of using the injections hot.—*Buffalo Med. & Surg. Journal.*

ANÆSTHETICS.

An anonymous writer, in a communication to the *Boston Medical and Surgical Journal* (September 7), asserts the safety of *inhalations of nitrous oxide*, for producing anæsthesia, and, objecting seriously to its indiscriminate use by ignorant and unskilled (dental?) practitioners, urges a trial of it by professional men.

"When properly prepared and properly administered, we cannot but regard it among the safest of inhalants. That prepared by ourselves we have inhaled to entire anæsthesia *one hundred and ten* times during the past ten months, with a very perceptible improvement in our general health, while we have given this gas to others for sanitary and anæsthetic objects some three hundred times in the same period; and in no single instance do we remember meeting with the least unfavorable result. In certain dental establishments in this city, it is almost, if not entirely, used for anæsthesia. The proprietor of one of these recently stated to us that it had been employed by him for anæsthesia in nearly eight thousand cases, with not a serious result.

"But by some it is urged that, while perhaps safe for brief anæsthesia, this cannot be predicated of the gas in protracted operations. In at least three instances, we have known entire anæsthesia maintained during surgical operations lasting from four to seven minutes, with the most happy effects on awakening. Others assure us of success with this in cases of anæsthesia much more protracted. From what we have heard and witnessed ourselves, we have reason to believe that entire insensibility to pain may be safely maintained for a longer period than with ether or chloroform. This may be inferred from the vitalizing character of nitrous oxide, which maintains the temperature and pulse by oxidizing the blood, while it is well known that the effects of ether, or more particularly chloroform, are the reverse of this.

"To be safe, nitrous oxide, like chloroform, should be properly made and administered. In making this gas, we employ an automatic regulator of the heat, confining the nitrate of

ammonia in the flask to a temperature scarcely above 400 degrees. The results of decomposition at this point are quite different from those where the heat of the salt is fluctuating, rising at times to 500 degrees, and even to 600 degrees, as is common by the ordinary process of heating. Thus prepared, the gas in its passage to the gas-holder is forced through five one-and-a-half-gallon glass washers, filled with an alkaline solution and pure water; each washer being provided with perforated glass tubes for finely dividing and washing the gas. Thus five distinct plunges are made through as many feet of water, when the gas is passed into a zinc receiver, where it is confined over water. This whole process is simple, safe, and economical.

"For inhaling we employ an improved valved apparatus, drawing the gas directly from the zinc holder and exhaling into the open air. With this arrangement perfect anæsthesia in its most agreeable form may be produced, while even the most sensitive suffer not the least inconvenience."

Dr. Nunneley, of Leeds, brings forward two new anæsthetics as substitutes for chloroform, the *bromide of ethyl* and the *chloride of olefiant gas*, each of which he believes to possess important advantages over chloroform. They both act speedily, pleasantly, and well. The patient might be kept insensible for any length of time, while the most painful and prolonged operations were being performed. No disagreeable symptoms had in any case, resulted from their use. The original difficulty and cost of their manufacture has been overcome, and, should their use become general, they can be made at a cost not exceeding that of chloroform, if not at less. (*Amer. Jour. Med. Science, October, from Medical Times and Gazette,*) *and St. Louis Med. Journal.*

CHOLERA AND OZONE.

To the Editor of the Lancet.—Sir,—In *The Times* of Aug. 26th and 30th, there are two letters on "Cholera and Ozone," in which directions are given for the production of ozone by the use of phosphorus, and the latter is recommended as a disinfectant. I beg to state that for upwards of seventeen years I have used phosphorus for producing ozone, and for five years I have used it as a disinfectant.

In a paper "On the Luminosity of Phosphorus in connection with Atmospheric Conditions," which I read at the Cambridge meeting of the British Association in 1862, I stated that phos-

phorus was a valuable disinfectant, but that it was effective only during its luminous condition, as ozone is formed only when it is luminous.

The luminosity and non-luminosity of phosphorus are influenced by atmospheric conditions. High pressure, a low degree of temperature, and wind from the north points of the compass are the conditions of non-luminosity; and low pressure, high temperature, and wind from south points of the compass are the conditions of luminosity. The former atmospheric conditions are those of cholera periods, and cholera disappears with the setting in of the latter.

About the 1st of September, 1853, cholera appeared in Newcastle. On the 20th the number of deaths was—cholera, 108; diarrhœa, 10. On the the 19th the south, or ozoniferous, current of the air set in and continued. On the 28th the number of deaths reported in *The Times* was—cholera, 18; diarrhœa, 2. From the 1st of September to the 19th the mean quantity of ozone was scarcely 1-0 of my scale; but from the latter date to the end of the month it ranged from 3 to 8 daily. The epidemic in London, in 1854, disappeared with the setting in of similar atmospheric conditions.

For purifying apartments I use phosphorus in the following way:—I take a quart bottle with a wide mouth, into which I put rather more than half a pint of water; a piece of cork carrying a flat piece of phosphorus with a clean cut surface, floats upon the water. The mouth of the bottle is loosely covered with a cork. The bottle is then placed, first in one part, and then in another, of the apartment to be purified until the peculiar smell of ozone is detected, or until my test papers indicate 1· of my ozone scale. The process of purifying may be performed night and morning, or oftener. For purifying air in the neighborhood of street gratings or in sewers, I simply suspend a piece of phosphorus from the grating. In appartments the temperature may be sufficiently high to keep phosphorus luminous under all atmospheric conditions; but in sewers it will be luminous and non-luminous according to the height of the barometer, the temperature of the surrounding air, and the direction of the wind, and ozone will be produced only when it is luminous. I am, Sir, your obedient servant,

—*London Lancet.* T. MOFFAT, M.D.

Book Notices.

THE PRACTICE OF MEDICINE. By THOMAS HAWKS TANNER, M.D., F.L.S., Member of the Royal College of Physicians, &c., &c., &c. From the Fifth London Edition; enlarged and improved. Philadelphia: LINDSAY & BLAKISTON. 1866.

This is a new edition of a work which has been long enough before the profession to be well known. The present edition, however, is so much enlarged as to have much the appearance of a new work. It is a full-sized octavo volume of 835 pages, printed on good type and paper, and substantially bound. The author writes in a plain, concise, and agreeable style; and most of his observations in relation to the nature and treatment of diseases, are characterized by good sense and extensive research. As a manual, or text-book, for the use of students, while in attendance at the medical colleges, it would be both convenient and useful, but it is too brief to constitute a satisfactory treatise on the science and practice of medicine. For instance, the consideration of the whole class of idiopathic fevers is compressed into the short space of 42 pages, while more than 100 pages are occupied by an appendix of formulæ. Still the volume is well worth a place in the library of the practitioner.

For sale by W. B. KEEN & Co., 148 Lake Street, Chicago.

CHLOROFORM: ITS ACTION AND ADMINISTRATION. By ARTHUR ERNEST SANSOM, M.B., London, late House Physician and Physician-Accoucheur's Assistant to King's College Hospital. Philadelphia: LINDSAY & BLAKISTON. 1866.

This is an American edition of a new English work, on a very interesting and important subject. It is a small-sized octavo volume, containing 279 pages, published in fair style. The work is divided into twenty chapters, with the following titles:

I. The Discovery of Chloroform. II. The Influence of the Discovery. III. The Chemistry of Chloroform. IV. The Effects of its Inhalation. V. The Physiological Action of Chloroform and its Allies. VI. The Action of Chloroform and Anæsthetic Agents, &c., upon the Blood and the Circulation—their *modus operandi*. VII. The Danger of Chloroform, and

the Circumstances which modify it. VIII. Diseased Conditions which increase the Danger of Chloroform. IX. The Dangers of the Incautious Administration of Chloroform. X. Signs of Danger under the Influence of Chloroform. XI. Nature and Mode of Death from Chloroform. XII. Resuscitation in Apparent Death from Chloroform. XIII. Resuscitation, Practical Details, Summary. XIV. Methods of administering Chloroform. XV. Practical Rules for the Administration of Chloroform. XVI. On Anæsthetic Mixtures. XVII. Chloroform in Surgery. XVIII. Chloroform in Obstetric Practice. XIX. Chloroform in Practical Medicine. XX. Chloroform in Dentistry.

From this table of contents, our readers will readily infer the general scope of the work, as well as the special topics discussed. The author is an enthusiastic advocate of the use of chloroform in preference to other anæsthetic agents. Although, in a hasty perusal, we find many items in reference to which we should dissent from the author's views, yet both students and practitioners will find a careful reading of the work both pleasant and profitable.

For sale by W. B. Keen & Co., 148 Lake St., Chicago.

On the Diseases, Injuries, and Malformations of the Rectum and Anus; with Remarks on Habitual Constipation. By T. J. Ashton, formerly Surgeon to the Blenheim Dispensary; Fellow of the Royal Medico-Chirurgical Society; Member of the Pathological Society of London, &c., &c. With Illustrations. Second American, from the Fourth and Revised English Edition. Philadelphia: Henry C. Lea. 1865.

This is a new and carefully revised edition of one of the most valuable special treatises that the physician and surgeon can have in his library. It is a full-sized octavo, of 267 pages. The following important topics are pretty fully and practically considered, viz.:—Irritation and Itching of the Anus; Inflammation and Excoriation of the Anus; Excrescences of the Anal Region; Contraction of the Anus; Fissure of the Anus and Extremity of the Rectum; Inflammation of the Rectum; Ulceration of the Rectum; Hæmorrhoidal Affections; Enlargement of Hæmorrhoidal Veins; Prolapsus of the Rectum; Abscesses

near the Rectum; Fistula in Ano; Polypi of the Rectum Stricture of the Rectum; Malignant Diseases of the Rectum; Injuries of the Rectum; Foreign Bodies in the Rectum; Malformations of the Rectum; and Habitual Constipation.

For sale by W. B. KEEN & Co., 148 Lake St., Chicago.

THE PRINCIPLES OF SURGERY. By JAMES SYME, F.R.S.E., Surgeon in ordinary to the Queen, in Scotland; Professor of Clinical Surgery in the University of Edinburgh; Member of the General Medical Council, &c., &c., &c. To which are appended his treatises on "The Diseases of the Rectum;" "Stricture of the Urethra, and Fistula in Perinæo;" "the Excision of Diseased Joints," and numerous additional contributions to the pathology and practice of surgery. Edited by his former pupil, DONALD MACLEAN, M.D., L.R.C.S.E., Professor of the Institutes of Medicine, and Lecturer on Clinical Surgery, Queen's University, Canada. Philadelphia: J. B. LIPPINCOTT & Co. 1866.

This is a full-sized octavo volume of 880 pages, published in excellent style. The author is well-known as one of the ablest and most distinguished surgeons in Europe. This treatise on the "Principles of Surgery" occupies the first 524 pages of the present volume. The remaining 356 pages are occupied by an appendix essays on "Diseases of the Rectum;" on "Stricture of the Urethra, and Fistula in Perinæo;" on "Excision of Diseased Joints;" on "Excision of the Scapula and Tongue;" and clinical observations on various surgical topics and cases. The surgical part of the profession, especially, will thank the editor and publishers for giving us this very valuable addition to the list of surgical works.

For sale by S. C. GRIGGS & Co., Lake St., Chicago.

ON WAKEFULNESS. With an Introductory Chapter on the Physiology of Sleep. By WILLIAM A. HAMMOND, M.D., Fellow of the College of Physicians of Philadelphia, &c., &c., &c. Philadelphia: J. B. LIPPINCOTT & Co. 1866.

This is a very neatly published little monograph of 93 pages. The substance of it was originally published in the *New York Medical Journal.* It embraces four chapters, viz.: The Physiology of Sleep; the Pathology of Wakefulness; the Exciting Causes of Wakefulness; and the Treatment of Wakefulness.

In regard to the physiology of sleep, the author regards a

diminution of vascular fulness, or circulation of blood in the brain, as the immediate or proximate cause of sleep. That sleep and stupor, instead of being analogous conditions, depend on directly opposite states of the cerebral circulation; the first being accompanied by diminished fulness of the cerebral vessels, and the latter by increased fulness.

In regard to the pathology of wakefulness, he says:—"In primary insomnia there is always an increase in the quantity of blood circulating in the brain. This is either absolute or relative."

The following are enumerated by the author, as the exciting causes of wakefulness:—

1st. Long-continued or excessive intellectual action, or any powerful emotion of the mind.

2d. Those positions of the body which tend to impede the flow of blood from the brain, and, at the same time, do not obstruct its passage through the arteries.

3d. An increased determination of blood to the brain, by certain substances used as food or medicine.

4th. Certain functional derangements of such organs as cause an increased accumulation of blood in the brain.

The therapeutic measures recommended by the author, are indicated in the two following propositions:—"1st. Those which by their tendency to soothe the nervous system, or to distract the attention, diminish the action of the heart and bloodvessels, or correct irregularities in their function, and thus lessen the amount of blood in the brain. 2d. Those which directly, either mechanically or through a specific effect upon the circulatory organs, produce a similar effect."

The views of the author, thus briefly indicated, are illustrated in his monograph by the citation of cases and the detail of experiments of a highly interesting and instructive character. We think one of the principal defects in the physiological and pathological views of the author, and, indeed, of most other writers on the same subject, arises from a disposition to attribute all cerebral phenomena to changes in, or differences of, the cerebral circulation. Too exclusive importance is attached

to the mere mechanical conditions of greater or less vascular fulness of the brain, while the properties belonging to the brain structure, such as susceptibility and vital affinity, are almost entirely ignored. To this, and some items connected with the author's views of treatment, we may recur hereafter.

The work is for sale by S. C. Griggs & Co., Lake Street, Chicago.

The following works have been received, and shall be noticed more fully in our next issue, viz.:—

Lectures on Epilepsy, Pain, Paralysis, and certain other Disorders of the Nervous System. By Charles Bland Radcliffe, M.D., Fellow of the Royal College of Physicians of London, &c., &c. Philadelphia: Lindsay & Blakiston. 1866.

Rhinoscopy and Laryngoscopy; their Value in Practical Medicine. By Dr. Friederich Semeleder, Physician in ordinary to His Majesty the Emperor of Mexico, Member of the Royal Medical Society of Vienna, &c., &c. Translated from the German, by Edward T. Caswell, M.D. With Illustrations. New York: William Wood & Co., 61 Walker Street. 1866.

Editorial.

Chicago Medical Society.—*Discussion on Diphtheritic Croup, or Diphtheria involving the Larynx.—Lime-Water Inhalation.*—At a recent meeting of the Chicago Medical Society, while the subject of diphtheria as it invades the larynx was under discussion, Dr. J. P. Ross stated that he had recently tried the inhalation of the vapor of lime-water, as suggested by some foreign writer:—In one very strongly-marked case, in which the obstruction of the larynx was so great that the child was not expected to live more than a very few hours, the inhalation soon produced some relief, and in a few hours a considerable quantity of detached and broken shreds of diphtheritic membrane was discharged, and the child ultimately recovered. In another case, however, the relief afforded by the inhalation was only temporary, the patient dying in a few hours. If the lime-water vapor merely acts as a solvent of the diphtheritic

exudation upon the surface of the larynx and fauces, it must of necessity often fail to prevent a fatal termination in this form of diphtheria, because the dyspnœa, in many cases, arises more from the infiltration into, and consequent tumefaction of, the sub-mucous tissue at the base of the epiglottis and within the larynx, than from the amount of exudation upon the mucous surface. Still, so far as patients laboring under this much dreaded disease can be made to inhale aqueous vapor impregnated with alkalies or alkaline earths, it will, undoubtedly, aid materially in disintegrating the diphtheritic exudations, and, thereby, prove a valuable aid to other appropriate treatment. But it must not be forgotten that diphtheria is not a mere local disease of the larynx or fauces, but involves the whole system, depressing the vital properties and impairing the quality of the blood. Consequently, mere local applications of any kind cannot meet all the plain indications for treatment.

Illinois State Medical Society.—As the next annual meeting of the American Medical Association is to be held in Baltimore on the first Tuesday in May next, it will be necessary to hold the next meeting of our State Society on the first Tuesday in June. We hope the Committee of Arrangements at Decatur will remember this. As this brings the meeting of the State Society one month after that of the American Medical Association, the delegates to the latter, appointed last year at Bloomington, will hold their appointments for the coming meeting in Baltimore also.

The names of the delegates are as follows, viz.:—A. L. McArthur, M.D., of Joliet; L. T. Hewins, M.D., of Loda; J. W. Redden, M.D., of Shawneetown; J. M. Steele, M.D., of Grandview; J. S. Jewell, M.D., of Chicago; H. Noble, M.D., of Heyworth; T. F. Worrell, M.D., of Bloomington; E. L. Holmes, M.D., of Chicago; J. W. Freer, M.D., of Chicago; E. W. Moore, M.D., of Decatur; A. Niles, M.D., of Quincy; A. W. Heise, M.D., of Joliet; R. E. McVey, M.D., of Waverly; L. Clark, M.D., of Rockford; H. C. Luce, M.D., of Bloomington; D. Prince, M.D., of Jacksonville; D. Brainard, M.D., of

Chicago; W. A. Elder, M.D., of Bloomington; J. Brown, M.D., of Decatur; N. Wright, M.D., of Chatham.

We publish the names of the delegates, and call the attention of the Society to the change in the time of meeting thus early, for two purposes:—First, that all parties shall fully understand that the order of meeting for the state and national organizations for this year is reversed; the American Medical Association meeting at Baltimore, on the first Tuesday in May, and the Illinois State Medical Society, at Decatur, on the first Tuesday in June.

Second, that the delegates may have ample time to make their preparations to attend the meeting of the Association; and such of them as know they cannot attend, should inform the Secretary early, that substitutes may be selected.

Cook County Hospital—The Board of Supervisors of this county, under whose care is placed the interests of the poor of this city, has finally completed the arrangements for opening a public hospital for the sick poor of the city and county. It will occupy the building well known as the *City Hospital*, between 18th and 19th Streets. The following are announced as constituting the medical and surgical staff of the hospital, viz.:—*Attending Physicians*, Thomas Bevan, M.D., J. P. Ross, M.D., and H. W. Jones, M.D. *Attending Surgeons*, Geo. K. Amerman, M.D., R. A. Bogue, M.D., and Chas. G. Smith, M.D. *Consulting Physicians*, H. A. Johnson, M.D. and R. C. Hamill, M.D. *Consulting Surgeons*, J. W. Freer, M.D. and Wm. Wagner, M.D. *Pathologist*, Henry M. Lyman, M.D.

These are all excellent appointments, and we hope such regulations will be adopted by the Board of Supervisors as will prevent their being disturbed by the results of each annually recurring political election.

Revival of Medical Periodicals in the South.—In our last issue, we noticed the promised appearance of a medical journal in Richmond, Va., and at Memphis, Tenn. Since then we have received notices that the *New Orleans Medical and*

Surgical Journal will be revived under the editorial management of Dr. BENNETT DOWLER, well known to the profession as an able writer; and that the publication of medical journals will also be resumed at Atlanta, Ga., and Charleston, S. C. We are also informed that a new medical periodical is about to make its appearance in New York City, to be published by WM. WOOD & Co., and edited by Dr. SCHRADY.

OBITUARY NOTICE.—Pursuant to a call, the members of the medical profession of the City of Rockford met on the 21st ult., and unanimously adopted the following preamble and resolutions:—

Whereas, By the dispensation of Providence, Dr. WILLIAM LYMAN has been called from time to eternity; therefore,

Resolved, That, by the death of Dr. LYMAN, the medical profession has been bereft of one of its most devoted and noble members; society, of a true friend and benefactor; his family, of a loving and large-hearted protector; and we, his professional associates, of a friend who, by his uniform kindness of heart and geniality of manner, has won our esteem and respect.

Resolved, That we extend to the family of the deceased, our sympathy for their bereavement, and that we attend the funeral in a body.

Resolved, That a copy of these resolutions be transmitted, by the Secretary, to the bereaved family, and copies for publication, to the *Chicago Medical Journal*, CHICAGO MEDICAL EXAMINER, and the *Rockford Register*.

G. W. ROHR, *Secretary.* HENRY STRONG, M.D., *Chairman.*

PROF. DANIEL BRAINARD.—This well-known surgeon, who has occupied the Chair of Surgery in Rush Medical College, ever since the College was organized, took his departure for Europe a few days since. His family had preceded him a few months; and it is understood that they intend to remain in Europe several years.

SANITARY SCIENCE.—In an interesting introductory lecture on this subject, Dr. A. B. PALMER, Professor of Pathology and Practical Medicine, in the Medical Department of the Univer-

sity of Michigan, gives the following encouraging statistics, in relation to the effects of sanitary improvements on health and mortality:—

In the whole of England and Wales a registration of births, marriages, and deaths is now, and has for a considerable time, been carefully, and, in the main, accurately kept; and in several municipalities, such records have been kept for a long period. From these, we learn that with the advancement of science and civilization, the annual percentage of mortality has gradually diminished, and at the present period the chances of life are better than ever before. Astonishing changes in particular localities have been effected by the removal of nuisances, and by improvements in drainage, in pavements, and in the construction of dwellings and the like—these improvements more particularly affecting the towns and the poor. Now, whenever in any locality the death rate rises much above the average, as ascertained by the reports sent to the Register-General's Office in London, enquiry is made into the cause, and when discovered, as it almost always is, measures are taken for its removal, and the death-rate falls to its usual level.

The following table from McCulloch's Statistics of the British Empire will show the progressive diminution of mortality for the last two centuries in the City of London:—

Years.	Amount of Mortality. Per Cent.
1660—35	8.000
1728—57	5.200
1771—80	5.000
1801—10	2.920
1831—35 Cholera years,	3.200
1831—41	2.522
1851—	2.340

Another table from the same work, shows the progress made during the last century in the management of children. The percentage of all the births of children dying before reaching the fifth year, was as follows:—

Years.	Percentage of deaths under five years.
1730—49	74.5
1750—69	63.0
1770—89	51.5
1790—1809	41.5
1810—29	31.8
1851	25.8

Similar changes have occurred in other countries. In France, for instance, at the close of the last century, the mean average duration of human life was less than twenty-nine years, whereas a dozen years ago it was thirty-three.

About one hundred years ago, in the imperfectly ventilated and badly managed workhouses of London, twenty-three out of every twenty-four children, born and retained in those establishments, died before attaining the age of one year. Such terrible mortality attracted the attention of Parliament; the causes were enquired into, and, by an act of that body, directing certain reforms, the mortality was immediately reduced from 95.83 per cent., to 13 per cent.—from 2,600 to 450 in a single year, thus saving 2,150 lives in those establishments alone. The present death-rate, during the first year of life, in all England, is 16.559 per cent. This act of Parliament, and the great care in management which immediately followed, reduced the mortality in the poorhouses much below the present average rate in the whole country. Human agencies seem thus to have something to do in influencing the issues of life and death.

At the present time, in the more rural districts of England, where the children have purer air and better attention, of all under five years, the annual death-rate is about 4 per cent.—or 40 in 1000; while in East London, Sheffield, Coventry, Leeds, and other similar places, it is over 10 per cent. In Manchester, a crowded manufacturing city, it is 11.7 per cent., and in Liverpool, a crowded, filthy seaport, it is 13.198 per cent., or 131.98 in 1000.

The mortuary statistics of our own country have been but imperfectly kept. In many of the states—in our own state, though so far advanced in the means of education, and in so many other respects, there is no general law on the subject of registration, and we have no authoritative means of knowing the proportions that are living or dying. This is a reproach, which, it is to be hoped, will soon be wiped away. In most of the cities throughout the country, records are kept, and we find these records showing, among others, the following facts in 1863:—

Place.	No. of deaths to each thousand of population.
New York,	27.0
Philadelphia,	23.1
Boston,	24.0
Newark, N.J.,	22.9
Providence, R.I.,	22.7
Hartford, Conn.,	18.2

In most rural districts the percentage of deaths is still smaller, and might be much further reduced if all the hygienic laws were obeyed. In New York, about 25,000 die annually. If the laws of health were obeyed as well, and no better, than in many rural districts, the deaths would not be more than 15,000. It thus appears that, at least, there are over 10,000 unnecessary deaths in that city. To every death there is estimated to be twenty cases of sickness, and for these 10,000 unnecessary deaths, there are 200,000 cases of unnecessary sickness. Each case of sickness is estimated to cost on an average, in loss of time, in medical attendance, and nursing, about $50. Now, the 200,000 cases of preventable sickness, multiplied by the number of dollars each costs, would give us $10,000,000 as the result. This vast sum of ten millions of dollars is annually spent in this one city for unnecessary sickness. But this is almost unworthy of mention in comparison with the bodily and mental suffering thus needlessly endured.

In whatever aspect this subject is viewed, its magnitude and importance surprise us; and the indifference with which it is treated by most men surprises us more.

Notwithstanding all these facts—the changes in the bills of mortality effected by changes in the habits of the people, and the conditions of their surroundings—permanent changes from 80 to 23 per thousand in a vast and still growing city—notwithstanding an act of Parliament reduced the mortality among the innocents in the poorhouses of London from 2,600 to 450, saving 2,150 lives in a single year, yet there is a sort of vague impression in the minds of many, that death, if not sickness, is a matter of special providence—a thing over which human agency has no control. If this be so, Gentlemen, our "occupation's gone." You may as well go home and let this department of the University be closed. These walls now devoted to science and an active humanity, should be given up to the teaching of a paralyzing fatalistic philosophy. Arabia could, doubtless, furnish a Mohammedan professor who would teach us to fold our hands in indifference, and exclaim, "Allah ruleth!" The Bible, however, teaches that, "whatsoever a man soweth that shall he also reap;" and the freedom and efficiency of human agency are everywhere taught. The fatalistic theory is as false in its application to this as to other subjects.

To the sentiments embraced in the following paragraph, from the same address, we cordially assent:—

Now, Gentlemen, of the importance of this subject of sani-

tary science—of a knowledge of its principles and a practical obedience to its precepts, no one can doubt. That this knowledge should be possessed by non-professional persons in order that its precepts be generally understood and observed, is equally evident; and it is also too apparent to require enforcing, that to professional men—to physicians, the community must chiefly look for this knowledge. It will be for you in your several stations and communities, after first obtaining it, to spread abroad your light. You should urge these subjects as branches of popular education. You should encourage and aid in the introduction of articles upon them into our periodical literature. The newspaper and the magazine—those great educators of the people, should be made channels through which this knowledge should flow abroad; and should there at any time occur within your sphere of observation any unusual sickness and mortality, it will be your duty as *guardians* of the *public health* and *teachers* of the people, to investigate the causes of such sickness with minuteness and faithfulness; and it will be in opposition to your duty to hide under a bushel your conclusions and the facts upon which they are based, for any temporary effect which the statement of such facts and conclusions may have upon either your own feelings and passing interests, or those of others. You cannot be too careful in arriving at the facts, or too rigid in your deductions from them; but when the facts have been ascertained beyond a reasonable doubt, and when your logic is without a perceptible flaw, place your light upon a candlestick, that it may yield the illumination so much needed.

Foreign Correspondence.—We copy the following interesting letter from the *St. Louis Medical and Surgical Journal* for November and December:—

LETTER FROM PROFESSOR CHAS. A. POPE, M.D.

Paris, August 27, 1865.

Messrs. Editors: It has been my pleasure, for some months past, to attend weekly, at the Hospital Necker, the cliniques of M. Civiale. During this time I have seen him perform a large number of his usual operations, such as urethrotomy, lithrotripsy, and lithotomy. In the crushing of calculi he is still unrivalled. The extreme care with which he examines his cases, and the wonderful ease, delicacy, and precision which characterize his manipulations, have not diminished with his advancing years. Compliments in this respect, however, he

generally declines, preferring that his great skill should be shared by all surgeons. His wish is to see lithrotripsy practiced by the whole profession, and not confined to a few. Forty years' observation and experience in an extensive and special practice could not fail to render him thoroughly proficient in all that concerns the diseases of the urinary organs. It must be recollected that in the diagnosis of these we are deprived of the use of sight, and are guided by the touch alone. Nor is the touch direct, for it is exercised through the medium of a long, metallic instrument. One's admiration, therefore, is enhanced to see with what accuracy he appreciates the various conditions of the urethra and bladder, the presence or absence of calculi, whether free or encysted, their size, shape, hardness, and number, as well as the various tumors and polypi, their narrow or broad base, and, in short, all that concerns the pathology of these important organs. Yet, notwithstanding his ability, Civiale is always modest, and deprecates the rashness and presumption of those who claim to be absolute in their diagnosis and treatment of these difficult and often obscure complaints. The method and instruments are the same which he has employed for the last thirty years. If there be one quality which characterizes him more than another, it is gentleness. This is his great watchword. He never inflicts useless pain, never fatigues his patient, by prolonged operations, and always properly prepares them for the use of his instruments, which seem to glide of their own accord, and are of small size to admit of freer play. A favorite remark with him is, always to give the urethra time to swallow the instruments, the wisdom of which is apparent to all who are familiar with such operations. His lithrotripsycal operations are almost perfect.

In nodulated strictures he still uses his own urethrotome, which cuts, as you know, from behind forwards, or from the bladder to the penis. Sometimes he incises the urethra for seven inches in extent; but, generally, he limits the incision to the mere nodosity. He prefers to act on the posterior wall of the urethra, whilst Maissonneuve almost always cuts anteriorly. Both are careful to introduce immediately an elastic catheter, which is retained for thirty-six or forty-eight hours.

In lithrotripsy I have said that Civiale is unrivalled; but in lithotomy he is by no means expert. Blunt instruments along natural routes he thoroughly understands; but cutting instruments are out of place in his hands. My recollection of him would have ever been one of unalloyed pleasure and admiration, but for an unfortunate case of lithotomy which I not long since

witnessed, in which he but too plainly evinced his want of surgical skill.

The patient was a man about fifty-five years of age—the stone being of rather large size. No chloroform was used, and, during the protracted operation, his sufferings were very great. A straight incision was made in the median line, in front of the anus. The staff having been reached, a double *lithotome cache* was pushed into the bladder, and, the blades having been made to project, the instrument was withdrawn. With the common lithotomy forceps an attempt was made to extract the stone, but failing, resort was had to a complex apparatus for crushing, or rather disrupting, the foreign body. This consisted of a large forceps, whose strong handles were forcibly approximated by a vice, through which and the joint of the forceps a perforating instrument like a gimblet and worked by a screw was introduced against the included stone with the view of boring into it, and thus causing its disruption. After much time, labor, and suffering, the operator succeeded in breaking off and removing a portion of calculus, more than an hour having been consumed in ineffectual attempts at extraction, during which both the surgeon and patient were thoroughly exhausted; the latter was removed to his bed with the promise that the remainder of the stone would be taken from him in a few days. He died, however, on the second day, and the stone was removed after death. It constituted about two-thirds of the whole mass. When entire, it was ovoidal in shape, and would have measured about $2\frac{3}{4}$ inches in length by $2\frac{1}{4}$ inches in thickness. I have myself successfully removed a larger stone from a much smaller patient by the single laternal incision.

A worse operation I scarcely ever witnessed. Its plan was defective, as the direction of the outer and inner incisions were at right angles to each other, and its execution was unskilful. The surgeon did not give the ordinary forceps a fair trial; and if, as he said, the stone was in the bas-fond of the bladder, which closely embraced it, why did he not introduce his finger into the rectum so as to facilitate the seizure? He seemed more intent in applying a sort of perineal lithrotripsy through the wound; but, whenever this becomes necessary, it were preferable to resort at once to hypogastric lithotomy.

For his own reputation, and the good of his patients, it is to he hoped that the able lithrotriptor will not often attempt the knife, but in cases requiring its use that he will hand them over to some more skilful confrere. Civiale seems to be about seventy years old. He is followed by a small class of from ten to

fifteen students, the majority of whom are foreigners. He is said to be very wealthy, and pays, I have been told, six thousand francs a-year for his service at the Hospital Necker.

At this same hospital I have occasionally seen the application of the *endoscope* in the hands of its inventor, M. Désormeaux. Although ingenious, it does not strike me as being of much practical value. Thus far, at least, its revelations have not enabled us to treat the diseases of the urethra and bladder with any greater success so that, at present, it may be regarded as more curious than useful.

By means of a perforated mirror, placed obliquely and arranged precisely like Hutchinson's ear speculum, the light of a lamp is projected through a silver tube into the urethra, the changes of whose walls we may plainly see, as also the margin of the prostate and the interior of the bladder. This last is accomplished by an angular catheter, having a small, glass window at the convexity or apex of the angle, which, whilst permitting vision, prevents the flow of urine which would obscure it. In the normal state the prostatic margin presents a crescentic shape, with the convexity posteriorly or inferiorly; if hypertrophied, this convexity is forward or superiorly. The inner surface of the bladder can be plainly seen, and the vascular ramifications on a whitish ground easily distinguished.

M. Désormeaux has several times observed encysted calculi and different fungous growths contained in the living bladder.

More than twenty years ago the idea of looking into the bladder was entertained by Segalas and others, but fell into neglect until a few years ago, when M. Désormeaux revived and accomplished it. This gentleman certainly deserves much credit for his preserving efforts in this direction; and it is to be hoped that, through the instrumentality of his urethroscope or endoscope—for he applies it to the bladder, and rectum also —valuable additions to our means of diagnosis and treatment may yet be effected. His pleasant manner and polite attention to strangers are quite remarkable, and enlist all such visitors in his favor.

Among the subjects which have greatly interested me during my sojourn in Paris, is one which, although largely medical, has yet an important surgical bearing. I allude to the application of electricity in the treatment of disease.

M. Duchesne (de Boulogne), so well known be his writings on this subject, is always pleased to receive visitors at his consultations, where his numerous patients afford a fine field for study and observation. His collection of casts, photographs and speci-

mens, microscopical and pathological, is very extensive and unique. No other, perhaps, has so well investigated muscular action. From the study of the muscles he was naturally led to that of the nerves which influence them. The various changes which take place in both the brain and spinal marrow, corresponding to the different kinds of palsey, are beautifully shown under the microscope, the views of which have been most successfully photographed. It was, I believe, M. Duchesne who first discovered that the muscles, which failed to respond to the influence of the will, were entirely susceptible to the influence of the electric irritation, and vice versa. This view, at least in the first proposition, has been confirmed by our own surgeons in gun-shot injuries of nerves, as also by the experiments on animals which I have had the pleasure of witnessing at the *College de France*, by M. Claude Bernard, on the action of the Woorara poison.

In paralysis, the result of cerebral lesions, the muscular tissue, although atrophied from the want of use, undergoes but little other alteration, whilst in that dependent on changes in the spinal marrow, the fatty degeneration of muscles sooner or later ensues, and sometimes with great rapidity. The muscles which have undergone this fatty transformation are not susceptible to the electric influence. The larger number of cases of club-foot and club-hand are dependent on this latter condition, the transformation affecting one or more of the muscles of the limbs, so that, in these instances, tenotomy seldom does much good. If the whole tissue of a muscle have become transformed into fat, nothing can restore it. The loss, in this way, of the single *tibialis anticus*, M. Duchesne considers as more serious than that of all the other muscles controlling the motions of the foot. When thus singly affected, there is a resulting *pes equinus*, with eversion of the foot by the peronei muscles, and this deformity increasing with the growth of the patient, he at length walks on the inner ankle. Were, however, the effect general, *i.e.*, embracing all the muscles of the leg, an apparatus can be worn, which, giving support to the joint, also keeps the foot in proper position, and thus diminishes both the lameness and the deformity.

A case of contracted little finger was recently presented at the clinique of Nélaton, which M. Duchesne well showed to depend on the tendon of the flexer profundus. On the opposite arm of the patient the electric current, when applied to the superficial flexor, caused the fingers to bend only at the metacarpo-phalangeal articulation; whilst its application to the inner

side of the arm, over the deep flexor, caused the additional bending of all the joints of the fingers themselves. The contrast in the flexion was very marked. M. Nélaton divided the tendon of the profundus in the palm of the hand, at its cubital margin.

On another occasion, at the same clinique, in attempting to show, on a freshly amputated leg, the accuracy with which any single muscle may be made to contract under the electric stimules, M. Duchesne was not a little disconcerted at his incomplete success, which, at the moment, he could not explain. The cause of his failure was discovered afterwards to have been a pathological agglutination of the muscles, which prevented their separate action.

In a case of "painful flat-foot," Nélaton, contrary to the opinion of M. Duchesne, divided the tendon of the long peroneus. The pain ceased for a time, that is, as long as the patient was quiet in bed. On using the limb, however, or on standing for some time, the pain returned, the patient stating that her condition was not at all improved. Having waited for the reparation of the divided tendon, M. Duchesne applied his battery, the woman avowing her improvement after each application. He states confidently that in a short time she will be completely relieved.

In these cases it is the inefficiency of the long peroneus which causes the flat-foot, being a sort of valgus, and the pain is owing to the unaccustomed pressure of the tarsal bones at the upper and outer part of the foot, where it is invariably found, at the depression of the cuboid bone and the astragalus. The arch of the foot also being destroyed, there results a painful compression of the plantar nerves.

There is, likewise, a pastry cook who had suffered in this way for many years. Although twenty years old, his pain has been entirely relieved by the electric current, and he is able to stand all day. Under its repeated use, also, there is an evident commencement of an arch to his foot.

There is a variety of paralysis, a marked specimen of which was exhibited in a boy, that M. Duchesne calls "*paralysie hypertrophique!* The muscles of the legs, though weak, are overdeveloped in size. The upper and lower limbs of the paraplegic patient seemed to belong to different individuals, so great was their disparity. Several photographic pictures of other patients exhibited the same variety of this unusual paralysis. In its cure, the hypertrophied muscles become reduced to their normal size.

A woman consulted M. Duchesne, complaining of intense

though transitory pains, shooting down the right thigh, and coming on at intervals for two or three days, and then disappearing for several months, to recur again in the same way. The arm of the same side was also somewhat effected. He remarked that such cases, in their incipiency, were very commonly mistaken for and treated as rheumatism or neuralgia, when, in reality, they were the precursory symptoms of a most grave affection. The case was one of what is called "*ataxie locomotrice progressive.*" The patient already presents other confirmatory symptoms in the ambliopia, dilatation of the pupil, and changes in the optic papilla, with inability to walk steadily with the eyes closed, all showing the cerebral trouble. The nitrate of silver has recently been much vaunted in the treatment of this affection; but as there was a slight syphilitic taint, M. Duchesne entertained the hope of relieving his patient by means of the iodide of potassium and electricity, for although the tactile sensibility of the limb was impared, its electric sensibility and contractility were not.

M. Duchesne is now publishing a new work on his favorite subject. It is a field which, in a sense, he has made his own; and the patience and enlightened zeal with which he has cultivated it are deserving of all praise. It is to be hoped that his researches will lead to still further discoveries, and confer yet more important benefits on the profession and humanity.

Yours very truly,
CHAS. A. POPE.

Investigations undertaken to prove that the Electric Condition of Mineral Waters is the Principal Cause of their Activity.—M. Scoutetten has of late worked very hard to prove the above proposition, and has published several accounts of his researches in the French medical papers. To give these researches some authenticity, M. Scoutetten repeated his experiments, a short time ago, at Mont Dore, a watering-place in Auvergne, under the eye of a distinguished medical committee, whose report is inserted in *L'Union Medicale* of the 25th of July. The author states, in his introduction, that "his researches throw a new light on the question; they prove that the waters, when emerging from the soil, are in an exceptionally active condition, that a chemical action productive of electrical phenomena is going on; and that to this cause the general effects of mineral waters are to be attributed." The experiments undertaken before the committee alluded to above, have proved—1. That the platinum electrodes, placed in ordi-

nary water contained in a glass or china vessel, are not affected by even a trace of dynamic electricity; and that the needle of Nobili's galvanometer remained motionless. 2. That the same experiment, performed with mineral water immediately caused a considerable deviation of the needle. 3. That the same mineral water was examined in a like manner at various periods after collecting the water at the spring, and at different degrees of temperature, it being found that the elevation of the temperature sensibly increases the electrical manifestations; that the latter becomes weaker, on the contrary, the later the water is examined after emerging from the spring, which peculiarity is easily explained by the diminution and subsequent cessation of chemical action. Another experiment has shown that the immersion of only a portion of the human frame in mineral water is sufficient instantly to give rise to electrical phenomena, which are rendered manifest by the deviation of the needle. This important fact explains the exciting qualities of mineral waters, which qualities may be so powerful as to induce a feverish state in the individual acted upon. This property exists in all mineral waters, but in different degrees, regulated by the activity of the chemical combinations. This electrical action cures diseases by strengthening weakened organisms, which diseases are apparently widely different, but are nevertheless merely local manifestations of a general morbid state. It should be added that several experiments were undertaken with gold leaves, so as to prove that statical electricity does not exist in mineral waters. The latter have also been tried mixed with milk or syrup, and it was found that this mixture sensibly lessens the active properties of the waters.—*London Lancet.*

Chronic Farcy in Man.—A case is published in a French journal of a blacksmith who used to sleep in the stables. One of the horses was taken ill and died, without any symptoms of glanders, but affected with an extremely fœted diarrhœa. Soon afterwards the man sickened and died exhausted in hospital, with a great number of tumors which had formed in different parts of the body. One of these suppurated, and the pus was inoculated in various ways on an old horse and a donkey. Both died a few days after—the first with signs of chronic farcy, the second with those of acute glanders. The three autopsies revealed extensive deposits of softish and small tumors in the lungs.—*London Lancet.*

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THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., EDITOR.

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Original Contributions.

ARTICLE III.

A CASE OF OVARIOTOMY.

BY E. B. WOLCOTT, M.D., of Milwaukee, Wis.

EDITOR CHICAGO MEDICAL EXAMINER:

DEAR SIR:—The following case of ovariotomy, as an element of statistics, may be worth reporting. If you think so, please give it a place in the EXAMINER:—

Miss W., aged about 27, some three years and a-half prior to the operation, felt the first symptoms that ultimately called for ovariotomy. In the fall of 1863, one year after the tumor was first discovered, her menses ceased. Soon after, she began to "bloat," as she termed it, and got weak. In May, of 1864, the abdomen filled rapidly with water, and to such an extent that tapping became indispensable. From that time till I first saw her, which was on the 22d of September, 1865, the operation had been repeated nineteen times. I found the abdomen much distended, although but ten days had elapsed since the last tapping. She was failing rapidly in flesh and strength, and presented a clear case for an operation, if, after emptying the abdomen of water, no insuperable difficulties were discovered.

The next day, accompanied by my brother and Dr. SOLON MARKS, I drew off the water, and proceeded to an examination

of the tumor, which was favored by the relaxed condition of the abdominal parietes. Although pretty large, no extensive adhesions existed, nor other conditions forbidding an operation, which was, therefore, recommended and without hesitation submitted to.

The incision was made in the usual place and manner—at first, about five inches in length, intending, if, as I suspected, the tumor proved to be multilocular, to reduce the size by emptying the cysts. This was impracticable, from the thick consistence of the contents. I therefore extended the incision to the umbilicus; this enabled me, by pretty firm pressure, to bring the tumor to the surface, through the opening. All adhesions were easily broken by the fingers. I found it attached to the right ovary by a pedicle about two inches wide, by three-quarters of an inch in thickness. This was ligated by passing a double cord through the centre and tying both ways, with great firmness. After detaching the tumor and cleansing the parts in the usual way, the wound was closed by interrupted sutures, including all the structures, save the peritoneum. The ligatures of the pedicle, preserving both ends of each, were twisted into a cord and brought to the surface through the lower angle of the wound, without attempting to confine the pedicle to the surface, which, from its shortness, would have drawn the point of attachment much below the level of the pubes. This disposition of the ligatures was intended to preserve an opening for any matter that might accumulate about the extremity of the pedicle. No adhesive straps were used nor dressing of any kind, save a pledget wet in warm water covering the wound, and changed as often as it became soiled. The patient was now removed to bed, and a grain of morphine administered.

The tumor weighed fifteen pounds; was multilocular, the cysts being filled with a thick, ropy substance.

A brief general outline of subsequent management is all that can be profitable; the details must necessarily vary with each individual case. One of the following pills was given every six hours, beginning in the morning after the operation, which was September 24th:—

℞. Digitalis (leaves,) Quinine, āā ---------- ℈j.
Ext. Hyoscyamus, ---------- ℈ij.
Calomel, Ipecac., āā---------- gr.v.

Mix for pills No. xx.

The pills were continued for a week, as above, after which they were given once in eight hours. In the meantime occasional doses of morphine and quinine were given when indicated. Bowels were moved on the sixth day after operation, by injection containing emulsion of oil of turpentine, there being some tympanitis. The turpentine was also applied externally over the abdomen, and a bandage snugly pinned over all. Pulse ranged from 90 to 120. Mild, nourishing diet from the first, and on several occasions, where nausea existed, brandy toddy was used.

During the second week, the stitches from the upper portion of the wound were removed.

At the end of the second week, observing an occasional intermission of the pulse, and slight mental disturbance, the pill was given but twice a-day, attributing to the digitalis the above symptoms, and towards the end of the third week discontinued them entirely. The pulse, during this period, ranging from 80 to 100.

On the twentieth day after the operation, a free discharge of matter, somewhat offensive, burst out along the ligatures. This continued, gradually diminishing, about a week after the ligatures came away, which was on the thirtieth day after the operation.

Alternating with the pill, after reducing the number to two a-day, the following prescription was used, of which a teaspoonful was given twice a-day, until after the pill was discontinued, then three times daily for some ten days:—

℞. Quinine,---------- ℈ss.
Elix. Vit., ---------- ℈j.
Tinct. Cantharides,---------- ℈j.
Syrup Aurant,---------- ℈iij.

Mix.

In addition to the above, from time to time, as occasion

required, an opiate was given, and appropriate remedies to check a disposition to diarrhœa.

The specific effects of the digitalis were observable about a week—they would have been alarming had not the case been known.

In the management of the case, the object was to sustain the vital forces as far as could be done prudently, believing that to be the most successful way to prevent even inflammation and its consequences.

Miss W. is now attending to the domestic affairs of her father's household, in apparently sound health.

ARTICLE IV.

BLOOD-LETTING NOT NECESSARY IN PNEUMONIA.

By D. W. YOUNG, M.D., of Aurora, Ill.

An address read before the Aurora City Medical Association, at its annual meeting, Friday evening, January 12th, 1866, by the President of the Association.

Gentlemen of the Association:—Since you, at our last meeting, had the hardihood to impose upon me the task of writing something for the consideration of the Association this evening, I have determined to, in turn, impose upon your time by offering a few, perhaps illy-digested, reasons why I deem blood-letting not necessary in pneumonia. I shall not do so, however, expecting to answer fully the able paper and arguments presented at our last meeting, by my friend, Dr. S. R. Millard, favoring this remedy in this disease. Nevertheless, I deem it my duty to try and give reasons for the belief that is in me.

First. What is pneumonia? Is it a disease of function or structure, or both? All diseases consist in a change from the natural condition of the function or structure of the body. It is quite obvious, therefore, that we cannot obtain an accurate knowledge of the nature of disease until we have carefully studied the component parts of which it is made. As the anatomist or physiologist examines structures and functions by sep-

arating or analyzing them into their constituent parts before he enters on their contemplation as a whole, so must the pathologist carefully study and analyze the constituent parts or elements of disease, before he attempts to understand their combinations, consequences, or applies his remedies.

In pneumonia, we first have an intense injection of the capillaries of the lung. The blood is dammed up and the heart's action increased in consequence. The substances of the lung, the cells, and parenchyma are gorged with blood or bloody serum. The functions of respiration and circulation are impeded, accelerated, and otherwise changed from their normal standard. There is too much blood and not enough air in the lung, *without any actual disorganization*. The temperature of the body is exalted. The patient takes many forced inspirations, sighs, or gasps, and the breathing is quickened on the least exertion. The functions of the nervous system are also impaired, by reason of the defective oxygenation of the blood; the skin soon assumes a blue, unhealthy look, denoting that the aëration of the blood is imperfectly performed. The respiration is hurried and labored, with pain at each inspiration. The skin is dry and hot; pulse full and quick; bowels inclined to constipation; urine scanty and high-colored; some cough; slight expectoration, which is streaked with blood. There is intense congestion of the lung, which constitutes the first stage of the disease—the period of high febrile action.

If this engorged and congested condition be allowed to continue, the lung, after a time, undergoes further alterations. It still remains congested and red, externally and within; but it crepitates no longer under pressure; it now contains no air. The spongy character of the organ is lost; there is an interstitial deposit of lymph in the parietes of portions of the bronchial tubes and vesicles. The second stage of the disease, hepatization, is inaugurated, which, if permitted to remain and proceed, soon produces still further changes. The air-cells are obliterated; the aëration of the blood is still more improperly and imperfectly performed; the pulmonary circulation is, to a certain extent, arrested. The blood is changed; it no longer

passes freely and properly over the air-cells of the lung, to be exposed to the aërating action of the atmosphere. The hematoglobuline is changed, by reason of the defective oxygenation, and it is sent back through the systemic circulation, loaded with carbonic acid, and deficient in oxygen, and, as a consequence, the brain, nervous and muscular systems robbed of their accustomed and essential stimulus; the temperature of the body is lowered; the vital powers of the system reduced; the products of the inflammation changed from plastic to aplastic, and disorganization commences; the interstitial lymph gives place to a purulent fluid; and the third stage of the disease, gray hepatization or softening, is at hand. In relation to the causes of pneumonia, I shall offer nothing at this time, my only object in this paper, being to discuss the propriety of blood-letting as its remedy.

What are the indications for treatment in pneumonia? What the pathological condition to be remedied? In the first stage of the disease, we have an injection of the capillaries of the lung, soon followed by engorgement and infiltration of the cells and parenchyma. There is too much blood in the organ; as a consequence, respiration and pulmonary circulation are impeded. The question arises, What is the cause of there being too much blood in the lung? Is it because there is too much blood in the system? I apprehend not, as a general rule. On the contrary, we quite frequently meet with the most violent attacks in anæmic subjects—subjects who are deficient both in quantity and quality of blood. In these cases, at least, we must look for some other cause than the quantity of blood on hand. The object to be accomplished in this stage, is to unload the lung and its capillaries of the surplus blood; to equalize the circulation, and lessen the heart's action, in order that the blood shall not again be pumped back upon the lung with too much force.

Now, how are these very desirable objects to be attained? Dr. MILLARD says, by bleeding. I object. I contend that is too expensive to the constitution, *and unnecessary.* I hold that we are possessed of other means. ess expensive and equally

efficacious. Why is blood-letting expensive? What remote effect does the loss of blood produce upon the constitution? Does it lessen the quantity in circulation? Yes, but only for a short time. Does it change the quality of the blood? Yes, very materially. How, and why? Because we rob it of its red corpuscles, which are diminished in quantity by such means more rapidly than the other constituents. I hold that this is particularly deleterious and expensive to the constitution, because they constitute that portion of the blood that possesses the calorific and vivifying powers. They contain the globulin, hematin, and the principal portion of the phosphorus, fat, and potash salts, the material especially prepared by the blood-cells, and used so largely in the construction and nutrition of the nervous and muscular fabrics; robs the vital fluid of its nutrient and plastic materials; and, when we remember that the functions of the blood are, first, to maintain the activity of the nervous and muscular system, and, secondly, to supply the the materials for the molecular changes constantly going on in the tissues, we can readily understand why its withdrawal so frequently produces that peculiar condition of the brain and nervous system marked by great weakness and extreme irritability. Arterial blood is a powerful stimulant to the brain, while venous blood is equally as powerful a sedative. Hence, we can account for the convulsions in children sick with pneumonia, upon the theory that they are suffering from an overdose of a powerful sedative; so, also, upon the same theory, we must account for the extreme prostration that often ensues in adults sick with pneumonia. There is a lack of stimulation of the brain by oxygen. The blood in this disease is already deficient in quality, by reason of imperfect aëration—is at least five per cent. deficient in oxygen, in consequence of obstructed respiration and pulmonary circulation. Then, to take from it its globulin, hematin, and other nutrient materials by general blood-letting, certainly seems to me to be an illogical and an irrational procedure. Again, we all know that even if we do gain any advantage over the congestion by reducing the quantity of blood in circulation, it is but for a short time, for the

reason that the effects of blood-letting are not as lasting upon the quantity of blood in circulation as upon the quality. The quantity is soon made up by absorption from the watery portions of the tissues, so that the volume does not long remain diminished, and the heart soon has as large a quantity to propel, and the already weakened lung an inferior article to aërate, because it has been diluted by bleeding, and is, therefore, poorer, less nourishing, less stimulating, and less capable of sustaining the vital powers of life. This being the fact, *I say blood-letting in pneumonia is too expensive to the constitution, and the advantages gained over the disease are not equal to the waste.*

I am aware that in pneumonia the tendency towards degeneration is promoted by the disordered circulation in the lung. But is it claimed by its advocates that bleeding from the vein in the arm has any direct effect upon the coagulated extravasations and exudations of inflammation in the lung? I apprehend not. On the contrary, as I understand, the objects of the abstraction of blood by general blood-letting, are to ease the gorged capillaries of the inflamed organ by first reducing the quantity of blood in circulation, and, secondly, by lessening the heart's action. My proposition is, that the treatment should comprise the attempt to remove or counteract such local derangement, by the employment of such means as will not compromise the constitutional powers of the patient. Now, we know that bleeding does not always arrest the inflammatory action. On the contrary, there is great danger that it may continue, and even be increased and extended, in spite of the bleeding. In such cases, at least, there is great danger that the strength of the system will be so reduced as to prove unequal to the process of restoration; for, to remove the interstitial extravasation and to repair the damage that has occurred, a certain degree of vital power is requisite, together with a sufficient quantity of healthy blood.

Even when the bleeding does arrest the inflammatory action, it will not always cure the effects of the inflammation; it may be, and, in my opinion, is, liable to render them lingering in their departure, or even increase, and determine their fatality.

The subsequent debilitating effects of the loss of blood upon the system may be more certain and hurtful than the effects of the bleeding upon the local inflammation is beneficial. In selecting our remedies in the treatment of pneumonia, we should always bear in mind the fact that acute pneumonia, marked by no anomaly, complicated with no other malady, and occurring under ordinarily favorable circumstances, generally tends towards recovery, resolution, and a favorable issue. I say *generally*, but it does not always result thus favorably. In some cases, it assumes, from the very commencement, an adynamic or an otherwise unfavorable character, unwonted and accidental symptoms manifest themselves in its progress, owing to various contingent causes operating during its continuance, causes proper to the individual affected, or to a peculiarity of the nature and combination of the external agents which produce it. Age, sex, constitution, locality, epidemic influences, state of the season, atmosphere, or the epidemic constitution upon which it supervenes all tend to complicate and change the natural tendency of the disease. They should all be looked after and taken into account, before we apply or decide upon our remedy. *We must treat every case according to its own individuality.*

In no disease, perhaps, is this more clearly and impartially demanded, than in pneumonia. I say, then, it is especially important that we keep in mind, while prescribing in this disease, the fact that, in a majority of cases, the disease will get well in its own natural course, when not complicated. And, again, that it has two distinct periods, with distinct symptoms and indications of treatment—the period of congestion, high febrile action, and that of hepatization and disorganization.

If we had no recorded evidence, no statistics, no experience, nothing except general principles to fall back upon, even then, in my judgment, blood-letting could only be considered a logical remedy in the very commencement of a few exceptional cases, only admissible in certain sthenic cases and robust persons. But, most happily, we are not thus devoid of recorded evidence—statistical proofs against the use of the lancet in this disease. The French physicians, who bleed often and copiously

enough to satisfy the most bloodthirsty, lost a very large per cent. of their patients. Experience has proved, most undeniably, that even the entire expectant plan of treatment has saved a larger per cent. of patients than the most copious bleeders. Do not understand me, however, as arguing for, or adopting, the entire expectant plan of treatment—that is too extreme.

I would apply such measures as will *best assist nature*, without compromising the vital properties of the blood, or the strength of the patient. I would select my remedy with direct reference to indications of the case, and not because it is pneumonia. If I found quick, hurried, and labored breathing, full pulse, and other indications of congestion of the lung, I should at once attempt to counteract the difficulty. I should apply hot fomentations and counter-irritants to the chest and extremities, or even to the whole external surface, if necessary; I would invite the blood to the surface; I would, at the same time, administer such arterial sedatives as *are known to control the heart's action promptly*, without robbing the vital current of its nutrient elements. My experience is, that by reasonable energy and perseverence we can accomplish these desirable objects without much delay. Enveloping the chest with cotton batting, covered with oil-silk, has a fine influence upon the capillary circulation about the chest. When we have once controlled the heart's action, we can place a sentinel over the pulse *who can say with full confidence of being obeyed, so fast and no faster*, and if he perform his duties well and faithfully, we may confidently expect the patient to have a speedy convalescence, *because he has only to recover from the disease*, and not from what is often *harder, the bleeding.*

Perhaps, you will naturally inquire, with what particular article of the materia medica I propose to control the heart's action? I shall answer, with veratrum viride. I regard it as the most valuable arterial and nervous sedative at our command. I prefer it to the tartar emetic in pneumonia, because it is less violent in its action, and less exhausting to the constitution. It seems to be particularly adapted to the treatment of inflammation of the lungs. It controls the heart's action promptly,

and thus relieves the congestion, and, if resorted to early, will certainly obviate the use of the lancet. Nor need we be surprised at this, when we consider that veratrum viride affects the system, primarily, through the pneumogastric, and, secondarily, through the sympathetic nerves. Thus, we can easily and rationally account for its prompt action upon the heart, and general arterial system, and, through them, upon parts supplied by the solar plexus, while the brain remains but slightly, if at all, affected. In small doses, at long intervals, whereby the system is constantly stimulated to reaction, it is not cumulative, but exercises an undoubted eliminating and depurating influence over the blood and the glandular system, removing obstructions, abating congestions, relieving nervous irritation dependent thereon, and promoting the venous circulation. When we so gradually increase the dose as to control the action of the heart, but not to destroy the balance between the venous and arterial circulation, then it becomes a most valuable therapeutic in acute inflammations. This gradual controlling the heart's action is very important in pneumonia. When we recollect the valuable and interesting experiments of T. WHARTON JONES upon the tail of a tadpole, under the microscope, where he found that when the *vis a tergo* of an artery is suddenly diminished, congestion of the capillaries and venous radicals to which the artery leads is established, then we can appreciate the force of the proposition. Here is where I claim another advantage in favor of veratrum viride over blood-letting. In bringing the system so suddenly under the influence of the loss of blood, as is recommended, we arrest the *vis a tergo* of the arterial system, and the balance between the venous and arterial circulation is destroyed, and congestion of the capillaries and venous radicals of the lungs liable to ensue. The veratrum viride, at the same time that it controls the heart's action, also acts as a powerful diaphoretic, diuretic, and expectorant. Under its use we have profuse colliquative sweating, an increased secretion of bile, urine, and a copious exudation along the respiratory passages, all of which are especially calculated to unload the capillaries and venous radicals of their

surplus blood. But, in using this remedy, we should remember, while applying it in acute inflammations, our object is to prevent, rather than to promote, exudations; therefore, bringing the system under its influence gradually is the only way warranted by its physiological effects.

Finally, in conclusion, I desire to urge, that since blood-letting robs the blood of its vivifying and nutrient materials, by removing its red corpuscles, its globulin, hematin, phosphorus, fat, and potash salts, it compromises the constitutional powers of the patient; and, inasmuch as we possess other equally efficacious remedies, wherewith we can accomplish the same results equally quick, without thus robbing the vital current of its life-supporting properties, therefore, I say blood-letting, in uncomplicated cases of pneumonia, *is unnecessary, uncalled for, and can only be justifiable in very rare and extreme cases.*

ARTICLE V.

A PAPER ON OPIUM IN CERTAIN FORMS OF FEVER, AND IN DIARRHŒA AND DYSENTERY.

By S. B. HAWLEY, M.D., of Aurora, Ill.

Read before the Aurora City Medical Association, Dec. 1st, 1865.

My own experience has led me to believe that opium exercises a pernicious effect in certain forms or conditions of fever, and in a large number of cases of chronic diarrhœa and dysentery. The conditions of fever in which it has seemed to me to be a hurtful drug, are those denominated typhoid, and, particularly, that stage of fever marked by dryness of the mouth and fauces, constant thirst, and nervous, trembling motions of the muscular system. I am convinced that to give opium, or any of its preparations, when this condition exists, will increase the difficulty and prolong the time before convalescence.

This conviction rests upon personal observation of cases treated side by side, and consecutively with and without the use

of opiates; and, if my observations are not at fault, even the single sleeping powder given at bedtime delays the process of cure.

In chronic diarrhœa and dysentery, when the patient exhibits a tongue but slightly furred, characterized, rather, by a pale look and elongated state of the papillæ, with edges of the tongue red, has constant thirst, though the mouth may not appear dry when we see him, and some feeling as if bloated, I have never seen any, to me, satisfactory result follow the use of opiates.

In the summer of 1863, while I was on duty with my regiment, the 35th Ill., near Murfreesboro, Tenn., the dysentery prevailed extensively in our camps, and opium still held a prominent place in my mind as a suitable remedy in that disease. I shall, therefore, relate a case that occurred under my treatment and observation that season, and which is but one of very many similar cases that I could relate, bearing on the point I wish to elucidate:—

Private M., of Co. H., 35th Ill., applied to me for relief, on account of dysentery, about April 3d. I prescribed oleum ricini, ℥ss, tr. opii, ℥j, at once, and pulvis Doveri, grs. xx, ft. ch. No. iv., one to be taken each night and morning, and excuse from duty two days, at the end of which time he went on duty, thinking his trouble cured. But, in about two weeks, he reported, as bad as at the first. I then directed him to have:—

℞. Pill Hy., ---------- grs. x.
Opii, ---------- grs. vj.
Qui. S., ---------- grs. v.

Ft. Pills No. viij. To take one every four hours, and moved off with oleum ricini.

The second day after, I put him upon pills of quinine and opium, āā grs. j., to take one such three times a-day, for three days, and then grain pills of opium twice a-day for several days. This treatment produced considerable relief, so that he again went on duty for a time, but still reported at sick call every few days, saying that he was not quite cured.

In May, Dr. T., who had been for many months on duty in

the hospitals of Rolla and Louisville, joined the regiment, and I asked him to take charge of M.'s case. He did so, and prescribed with some seeming temporary benefit, but still the disease ran on. I observed his prescriptions far enough to know that opium formed a principal part of most of them.

About one month later, Dr. J. D. W. came on duty with the regiment, and I placed M. under his care, as he was still declining in general strength, and having four or five dysenteric discharges each day. He remained under his care till about the middle of July, taking opium and astringents, more or less, most of the time.

Up to this time, he had declined steadily, and then presented the following symptoms:—tongue covered with whitish, swollen papillæ, the posterior half a yellowish-white, smooth fur, the front showing the papillæ distinctly; he had little appetite; tumid abdomen; constant thirst, though the mouth appeared not very dry upon inspection. He was able to walk about the camp, and had about half a dozen stools a-day, one or two like a watery diarrhœa, and the balance mucus with an occasional tinge of blood.

He had often been carefully questioned, as to any chill, and had taken considerable quinine, under the belief that malaria was keeping up the disease; and some relief had seemed to result from time to time from the use of this remedy, but not lasting, and no chill had been clearly made out to exist. I, therefore, determined to try a, to me, new treatment in his case, though I confess that at the time he seemed too much reduced for the course of treatment which the event proved quite *apropos* to his case. I gave him sulph. magnesia, ℥ss., tartar emetic, grs. ss., quinine S. grs. v. at once, about 8 o'clock A.M. At 1 o'clock P.M., it not having moved the bowels at all freely, I repeated the dose which produced copious stools. That night he reported a more comfortable night's rest than he had had for three months, and for two days he had a better appetite, and there was some cleaning of the tongue; the papillæ approached their natural color; the bloat began to subside; and he showed a more cheerful aspect.

On the third day, there was some return of the old symptoms when I repeated the above prescription, and I gave directions to repeat it, less the tartar emetic, every other day for ten days. From this period he steadily convalesced, and was able to go through the terrible work of Chickamauga and Chattanooga that fall.

Many cases might be added to the point of laying aside opium and all astringents in these cases, but I shall proceed to show the rationale of my conclusions:—

"Opium," says Dr. WOOD, "is a stimulant narcotic. Taken by a healthy person, in a moderate dose, it increases the force, fulness, and frequency of the pulse, augments the temperature of the skin, invigorates the muscular system, quickens the senses, animates the spirits, and gives new energy to the intellectual faculties. Its operation, while thus extending to all parts of the system, is directed with peculiar force to the brain, the functions of which it excites sometimes even to intoxications or delirium. In a short time this excitation subsides, a calmness of the corporeal functions succeeds, and at the end of half an hour or hour from the administration of the narcotic all consciousness is lost in sleep. The soporific effect having continued for eight or ten hours, goes off, and is generally succeeded by more or less *nausea, headache, tremors, and other symptoms of diminished or irregular nervous action.* All secretions, with the exception of that from the skin, are either suspended or diminished, and the peristaltic motion of the bowels is lessened. When larger doses are taken, the period of excitement and exhilaration is shorter, the soporific and anodyne effects are more intense and of longer duration, and the succeeding symptoms of debility are more obvious and alarming."

The strong language he uses, in setting forth these final effects of opium, is almost identical with that used by STILLE, PEREIRA, CHRISTISON, ORFILA, and COPELAND in the same connection, and was, I think, intended to put us on our guard against its use in many cases where we have been accustomed to think it harmless, if not useful. The great comfort which an anodyne brings to a nervous patient, suffering moderate pain,

with uneasy and sympathetic nurses, has often, I think, led us to the use of this drug, when we had no good therapeutic reason for so doing, and, also, when there existed the best of reasons why we should not give it.

In typhoid, typhus, and bilious fevers, the secretions are usually nearly all locked up, as shown by the dry tongue, continued thirst, and diminished flow of urine, while water drank in the usual mode is not absorbed, as is natural, by the stomach, but flows on through the bowels and passes off in a diarrhœa. Why give a medicine that lessens the peristaltic action and dries up all the secretions, save that from the skin, when the disease produces the above set of symptoms? Do we believe in *similia similibus curantur* in these diseases? Or can we, as the Dover's powder propose, blow hot and cold in the same breath? I doubt it.

I would not be understood to urge the entire abandoning of opiates in these diseases, for, at times, we will find patients suffering under a degree of pain that must be relieved before anything else can be done. But I believe if we could discover the absolute status of these cases, we should find that every moment we continued the use of opiates in these diseases beyond the time required to relieve unendurable pain, prolongs the time before convalescence. And this, I believe, I have shown upon philosophical grounds, that is, that the opiate naturally increases the very condition we have to meet.

Likewise, in chronic diarrhœa and dysentery, when a dry mouth, constant thirst, and scanty urine, shows the natural secretions all deficient, it seems to me that opium, or any astringent, is most unphilosophical, though they may lessen the number of stools. What element of our systems does opium supply, that shall in any degree compensate for the fact that it produces nausea, headache, tremors, and other symptoms of nervous debility, while it dries up all the secretions? Are there not many and good reasons for believing that the torpor which it produces stops the very process by which nature is at work to remove the cause of the disease.

I make no attempt to exhaust this topic, but hope to place

clearly before your minds this, to me, glaring inconsistency of practice which has so long prevailed among physicians.

ARTICLE VI.

DR. C. F. TAYLOR'S SPINAL APPARATUS.

To N. S. DAVIS, M.D., *Editor Chicago Med. Examiner.*

DEAR SIR:—In the paper on Orthopædic Surgery, by Dr. DAVID PRINCE, of Jacksonville, Ill., which appeared in the August number of your journal, the doctor, in alluding to the instrument used by Dr. CHARLES F. TAYLOR, of this city, for the treatment of Pott's Disease of the Spine, says:—

"The hinges in Dr. Taylor's apparatus must certainly be useless complications of machinery, for the very object of the apparatus is to obviate movements of the vertebræ upon each other, and not to make special provision for motion. The elasticity of the material affords all the motion which should be permitted."

Dr. PRINCE cannot have a right conception of the form and uses of the instrument, or he would never have made such a statement. He seems to think that the hinges allow of motion forward, in which case they would certainly be worse than useless bits of mechanism. If he will look on page 26 of "The Mechanical Treatment of Angular Curvature," he will learn that they are "stop hinges in front, but free to bend backwarks, and allow the most unrestrained use of the muscles of the back," but *only in one direction*, namely, *backwards*, "thus stimulating and encouraging muscular action, as the patient, when free to do so, involuntarily makes frequent efforts to gain momentary relief from the instrument, by attempting to straighten himself up. Indeed, the spinal muscles, by alternate action and rest, actually alternate with the instrument, in sustaining the weight of the body and overcoming the curvature."

"It has proved to be useful in causing the development of the spinal muscles, instead of binding them up and causing their

atrophy, as results from the use of instruments which prevent muscular action."

But besides *preventing* motion forward, the hinges are of great advantage in another way. By referring to page 29 of Dr. Taylor's monograph before mentioned, we learn that:—"There are also little screws by which the hinges are forced open and the form of the instrument made straighter or more bent, as the case may be; thus increasing or diminishing the sustaining force at will."

Thus it will be seen that the hinges are used to *prevent* the motion which the "elasticity of the material" is sure to afford to the "vertebræ (*forward* by the weight of the body) *upon* each other," and that the only motion possible in Dr. Taylor's appliance (*backward*) is that which diminishes the pressure, by tending to bring the vertebræ *away* from each other.

During the past two years, I have enjoyed the opportunity of seeing quite a number of cases under treatment by Dr. Taylor's method, and have been struck by the simplicity and effectiveness of the instrument employed by him, and also by its easy adjustability and adaptation to the requirements of every case, and this knowledge of its superiority over every other that I have ever seen, has induced me to correct the erroneous views entertained by Dr. PRINCE regarding this very useful surgical appliance.

Very respectfully,

F. O. EARLE, M.D.,

New York, Dec. 28th, 1865. 75 *West 26th St.*

ARTICLE VII.

LAUGHING IN LARYNGOSCOPY, AND A NEW MODE OF APPLYING SOLUTIONS TO THE LARYNX.

BY H. A. JOHNSON, M.D., of Chicago, Ill.

In using the laryngoscope, every one, I presume, occasionally meets with a case in which there is extreme difficulty in getting a view of the glottis and vocal cords. After using all ordinary

means, I have sometimes been able to succeed by requesting the patient to laugh.

The process of laughing, not well described in most works on physiology, consists in a forcible expulsion of air, interrupted by a rapid alternation of approximation and separation of the vocal cords. The glottis is, at the same time, elevated and the pharynx widely opened. The movements, it is true, are rapid, but do not prevent the observation of the color, form, and physiological action of the parts. This method, I believe, is new, and, in some cases, valuable.

In the application of solutions to the vocal cords and interior of the larynx, advantage may sometimes be taken of the laryngeal mirror to accomplish the result.

If a jet from the syringe be thrown directly in the line of vision upon the mirror while the structures below are in sight, the reflected spray will be carried directly down upon the parts observed.

If the jet be thrown at the commencement of inspiration, it will reach the interior of the larynx below the true cords. The result is an almost immediate closure of these cords, but I have been able to see the solution falling upon their upper surface, while the expired air passed up in bubbles between them. It is well, as in other cases, to request the patient to sound the note *ah!* during the process.

I do not suggest this mode as applicable in all cases. The brush, or even a direct jet from the curved nozzle of a syringe, may often be more desirable. By the brush, especially, the extent of the application may be limited to the diseased parts.

611 *Wabash Avenue, Jan.* 21*st*, 1866.

Correspondence.

To Dr. N. S. Davis, *Ed. Chicago Med. Examiner:*

Dear Sir:—Upon the subject of ventilation, there is evidence that the world moves. The problem has been, how to

secure the comfort of a home with the purity of outdoor air. It has been supposed that this was the utmost possible attainment. More than this has been achieved. It has been found practicable to make an artificial mountain air without its rarity.

Mr. A. S. Lyman, a noted *inventor*, has, through 20 years of study and experiment, finally perfected an arrangement of chemical agents, so as to deprive the air of all its impurities and make it equal to that found above the influence of emanations from the surface of the earth.

The expedient consists in passing air over unslaked lime, which absorbs carbonic acid and some water and organic impurities, and elevates its temperature, giving it a tendency to rise. It then passes through fresh-burned charcoal, losing most of the impurities which the lime had not taken up. The purified air then ascends to the top of the apparatus, and, turning to descend, it passes over ice, which cools it and accelerates the current, which next passes out through orifices in which the current is divided up by wire screens, so as not to blow in one compact current. This apparatus is the head of a bed, or the back part of a desk or bookcase, or, on a larger scale, it is a part of a system of ventilation of a whole house.

When the apparatus is part of a bed, the sides of the bed are made high enough, either by curtains or the arrangement of the wooden framework, so that the cooled and purified air flowing in, at the head of the bed, does not flow immediately off upon the floor, but accumulates upon the patient or sleeper, covering and immersing him thus in a bath of cool pure air.

For the greatest benefit of this expedient, when applied to a desk, there should be a tight enclosure for the reader or writer to sit in, which becomes filled higher than the top of his head, so that, in the impure air of a city in a hot summer's day, he may sit in and breathe a chemically pure atmosphere, reduced to a temperature compatible with vigorous mental activity.

Other substances may be used for the purpose of taking impurities out of the air, but Mr. Lyman, from numerous trials, has come to prefer fresh-burned lime, fresh-heated charcoal, and ice. In winter time, the ice is a less essential part of the

ingredients, but in hot weather, the cooling of the air is a source of health and comfort which all can appreciate.

The principle of purification applies to the air of marshy regions occasioning ague, to general impurities of air, arising from all the innumerable kinds of decomposition in cities, favoring whatever epidemic may be impending, whether erysipelas, cholera, or dysentery, and to the air of crowded rooms, and the wards of hospitals generating typhus and typhoid fevers and imparting to wounds erysipelas, diffuse suppuration, and gangrene, and where the bone is involved in injury, ostitis and osteomyelitis; generally contaminating the blood with the poison absorbed with decomposing fluids, and involving the whole system in the low fever of pyæmia.

The infection of air contaminated with the decomposing organic exhalations from the lungs, or from pus and blood in a state of decomposition, is no less destructive to puerperal women who are very much in the condition of persons recently wounded, and who are subject to the same accidents of local and general poisoning through the contact of decomposing fluids and of air loaded with fœtid gases and floating cells and scales, ready, like spores, to produce their like wherever they may alight.

The device of Mr. LYMAN secures for patients a pure air to breathe, and in which to lie, but another *desideratum*, not yet fully realized, is an arrangement by which the expired air and other emanations of patients with infectious diseases shall be carried directly away without contaminating the air of the room in which they lie, thus affording protection to physicians and nurses who must sit or move about in the room.

It will be gratifying to the medical profession and to all philanthropists to know that Mr. LYMAN proposes to make his invention free of any charge for patent right to hospitals maintained for the benefit of the poor.

Some beds with the purifying attachment have been in operation, during the winter, at Bellevue Hospital, to the very great satisfaction of those who have watched the progress of the cases submitted to the influence of the purified air.

It is an old story in hot weather, in the progress of an epidemic, "If the weather would only change—if the wind would only blow from the North-west, we should have an improvement in the patients." It will certainly be a boon to mankind, and especially to all sick persons, to have the means of changing the weather, and, for the space of a few feet, of producing a North-west wind, as pure and as bracing as any that was ever manufactured in the laboratory of the heavens.

A new era in hospital construction will have dawned, when plans shall have been adopted to give them a purer atmosphere than exists in the free breezes outside. That this has been the desire of all who have investigated the subject, any one can see who reads a few pages, at random, upon what has been written upon hygiene during the last twenty years. I cannot do better than to quote a paragraph from Dr. KRACKOWIZER, from the *Bulletin of the New York Academy of Medicine*, vol. ii., 1865, p. 438.

"If, then, physicians look with a certain awe and resignation upon the ravages of pyæmia, it is not because they know less of its causes and of its nature than of other diseases, but because they see plainly how the cause might be removed, yet, under certain circumstances, are denied the means to prevent the disease.

"It is bad enough that the surgeon and the obstetrician find inherent difficulties in the treatment of wounds, in the management of abnormal labor, that they cannot help sometimes making mistakes in choosing the times for operations and in performing them; but it is discouraging to have to take an element into the calculation, in performing one's professional duty, that neither lies in the nature of the case, nor can be warded off by any degree of scientific acumen or professional skill.

"The preventive hygienic treatment goes before everything. If the sums spent all over the world for every sort of medicine in healing pyæmia—quinia included—could be accumulated in a fund wherewith to build a hospital in some part of the world, so perfect in its hygienic arrangements that pyæmia in it would be impossible, more would be done for diminishing its ravages,

than by all the attempts to heal patients when they once are its victims."

Dr. KRACKOWIZER truly says, "the *preventive* hygienic treatment goes before everything." According to Dr. HAMMOND (in his *Military Hygiene*, p. 426,) the amount of carbonic acid in the military hospitals which were found in the best condition was considerably above that in the outdoor air. While outside there was $\frac{37}{100}$ of a part in 1000 parts, there was in those in which there was the least attention paid to ventilation, $2\frac{11}{100}$ parts by volume in 1000 volumes of air.

LEBLANC found in one of the wards of the Salpetriere, 8 parts of carbonic acid in 1000 by weight, or $5\frac{33}{100}$ by volume, in 1000 volumes.

Dr. HAMMOND expresses the opinion, that 10 parts of carbonic acid in 1000 volumes of air, renders it altogether unfit for respiration, and that a smaller amount must be unhealthy in proportion. But it is probable that the organic material proceeding from the lungs and cutaneous surface is far more injurious than carbonic acid. Quoting from *Hammond's Hygiene*, p. 168:—"When we enter a room in which many persons are contained, we are struck at once by the oppressive character of the air. That this is not altogether due to the presence of carbonic acid, is very apparent from the peculiar odor evolved. The same is true of a chamber in which one has slept, and which has not yet been purified by ventilation; or of a bed which has been lain in."

At St. Cloud, it was noticed, a few years ago, that there was an annual visitation of typhoid fever in connexion with doubling the number of soldiers in the barracks, on the annual visits of the King. (*Hammond's Hygiene*, p. 428.) Medical literature is full of such instances of the origin of disease in overcrowding, especially in court-rooms, when constructed, as they formerly were, without any reference to the necessity for fresh air to breathe.

It may not be always practicable to have the freedom of outdoor air, but it is now practicable for all sleepers, sick or well,

in hospitals or private dwellings, to have air that is as good as outdoor air, and sometimes a great deal better.

Yours, Respectfully,
DAVID PRINCE.

21 *W. 12th St., New York, Jan.* 26.

NOTE.—A good description of Mr. LYMAN's apparatus may be found in the *Scientific American* for Dec. 9th, 1865.

Selections.

PERISCOPE OF MEDICAL AND GENERAL SCIENCE IN THEIR RELATIONS TO DENTISTRY.

BY GEO. J. ZIEGLER, M.D.

Reflex Action. By C. HANDFIELD JONES, M.B., F.R.C.P., F.R.S., Physician to St. Mary's Hospital, and Lecturer on Medicine.—"The chief question with regard to reflex or inhibitory paralysis is, does it depend on an influence exerted on the tissue of the nervous centres, or on excitation of the vaso-motor nerves of their bloodvessels, by which the latter are thrown into a state of anæmiating spasm? The latter is the view maintained by Brown-Séquard. It has in its favor the possibility of explaining on known grounds the occurrence of the paralysis; but against it there are considerations which seem to me greatly to preponderate. It is difficult to conceive that a spasm of remote origin should be limited to such a very small extent of vessels as would be contracted in some instances—*e.g.*, palsy of one-sixth nerve, ptosis of one eyelid. Spasms produced by reflex excitation tend mostly to assume a diffuse character. It is almost impossible to believe that a spasm of vessels should be so persistent as the hypothesis requires. In some instances, it would be necessary to suppose that the anæmiating spasm had continued for weeks or months. Moreover, we know from the results of embolism that any arterial obstruction continued above a few days in the brain is followed by degeneration and decay of the tissue. This would certainly have occurred in some of the cases which were of long standing, if the palsy had depended on anæmia of the nervous tissue. Now, even supposing the excitation to remain in operation all the time, there is

no doubt that the museular contractility would, sooner or later, become exhausted, and the contraetion therefore gives way to dilatation. Bernard says expressly that reflex actions of the vaso-motor nerves are manifested by contraetion of the vessels, followed by dilatation. Besides, on Brown-Séquard's view, the cessation of the irritation ought always to be followed speedily by cessation of the paralysis, the vessels again admitting blood into the previously anæmic part; whereas, we know that, in many cases, the paralysis eontinues long, or even does not come on at all, until after the irritation has ceased to aet. Not only so, but a curative effect is sometimes produeed by a stimulation of a different kind, as the interrupted eurrent, which would tend to eontraet vessels. Again, if it be admitted that a nervous centre may be funetionally paralysed from such causes as catarrh, overexertion, insolation, etc., a eonsiderable argument is supplied for the view that a similar state may be indueed also in a reflex manner. If, as I shall presently show, neuralgie pain is to be regarded as a eondition akin to paralysis, we have, in the very frequent instances of reflected pains we meet with, examples of morbid action closely allied to inhibitory. In these, however, it can hardly be thought that the nervous centre affeeted by the primary irritation is neecssarily anæmic. Moreover, it may be remarked that the same eause which gives rise to inhibitory paralysis may also produee very different effeets, as tetanic spasm, which certainly does not depend on an anæmic state of the centre.

"Assuming, then, that in reflex or inhibitory paralysis, both in its more and less typieal forms, the essential ehange is in the eells of the nervous tissue itself, and not in the vessels, we will proceed to consider some other instances of this kind of disorder. Dr. Watson refers to the production of amaurosis without visible ehange in the eye, in eonsequenee, apparently, of irritation of the dental nerves, the blindness ceasing after the extraction of some teeth which had grown irregularly. He quotes from Mr. Laurence an interesting ease, in which the extraction of a earious tooth, with a splinter of wood projecting from one of its fangs, proeured the restoration of the sight of the eye on the same side, which had been entirely lost for thirteen months. Improvement in vision eommenced immediately, and reeovery was perfeet by the ninth day. It is impossible that the eomplete amaurosis in this ease eould have been due to retinitis, as this would have certainly taken a much longer time to subside, and would, assuredly, after lasting so long, have left behind irreparable damage. It is worth remarking for

future reference as to the nature of neuralgia, that the amaurosis was attended with severe pain in the same side of the head and face. This I interpret as another paralytic phenomenon. Deafness is certainly a rarer result of inhibitory irritation than amaurosis, but the following case appears to be an example of it. It is related by M. Vautier, '*Ann. par Jamain*,' 1861, p. 90:—A lady, aged 54, spare and of a nervous temperament, was attacked, about four months before he saw her, with pain radiating into almost all the teeth, as well as into the muscles of the anterior and left side of the head. The eye of this side was in an almost constant state of lachrymation, and she had become completely deaf of this ear. She was sleepless and without appetite. After the extraction of the left wisdom tooth, which was a little loose and painful, the deafness immediately ceased, and the neuralgia disappeared. The rapidity of the change proves, I think, that the deafness was not the result of inflammation or any structural change in any part of the organ, but a nerve-disorder homologous to the existing neuralgia. It appears to me somewhat remarkable that, while reflected pains are so abundantly common, anæsthesia or numbness of like origin is decidedly rare. Both in the more acute and chronic forms of paraplegia produced by cold and wet, Graves states that there is much less impairment of sensation than of motion, and the loss of sensation is never so complete as in paraplegia from disease of the spine. The much greater tendency to impairment of motor than of sensory power in almost all kinds of nervous diseases, organic as well as inorganic, is a remarkable and unexplained fact. Schuh observes that motor nerves require for the exercise of their function a much greater perfection of structure than sensory do, and the restoration of the integrity of the nerve is less easily affected.

"Morbid impressions conveyed from the internal organs are well known to produce depressing effects on the nervous system, just as *per contra* impressions of an opposite kind are attended with a sense of satisfaction and 'wohlsein.' It is known to physiologists that the cravings of an empty stomach are much better appeased when some solid, though innutritious material, as earth or sawdust, is mixed with the liquid oil or honey on which some savage tribes are at times reduced to feed, than when the latter are taken alone. On the same ground, the Canadian 'voyageurs' tighten their famine girdles to the last holes when the vacuum so abhorrent to nature generally is felt and there is nothing to fill it. In a case under my own care, sensory paralysis was the result of gastric irritation. A female,

aged 32, had been ailing a long while. She suffered with stomach disorder of sub-inflammatory character, marked by anorexia, pain after food, and vomiting directly after eating. There was also severe headache, extending from the forehead to the back of the head, constant and not affected by position. Attacks occurred two or three times a week, or oftener, in which the left side of the face, and tongue, and left arm became numb, the numbness beginning in the tips of the fingers, and extending upwards to the face, lips, and tongue. At these times, her speech became thick, and continued so for an hour. Under treatment, directed to relieve the inflammatory condition of the stomach, the reflected disorder diminished considerably. The numbness of the thigh, which occurs in some cases during the descent of a calculus from the kidney to the bladder, is another instance of inhibitory anæsthesia.

"More frequent than disorders of the sensory nerves, are those where the intellectual centres are affected. Mr. Langston Parker says, 'In some persons, where the powers of the mind are naturally acute, they are singularly depressed after a full meal; some lose the faculty of thinking at all, others become deficient in judgment, and in others, again, memory is quite lost.' I was called to the case of a gentleman, in the course of last year, who was suffering from a sub-acute inflammatory affection of the stomach, who completely lost the faculty of memory after taking a teacupful of food, yet this patient was remarkable for his mechanical genius. A less portion of food did not impair his mind, which invariably became more powerful and clear from leeching or fomenting the epigastrium. Mr. Grantham relates a case (*Brit. Med. Jour.* June 7, 1862,) in which a man, aged 48, who died with symptoms apparently of cancer of the stomach, had been subject to paroxysms of violence, both mental and bodily, occurring more or less after dinner and supper. These exacerbations had gradually increased in severity from the commencement. The following case has been kindly communicated to me by Dr. Palmer:—Mrs. H., aged 50, has had a large family; still menstruates occasionally. Is temperate and regular in her habits, taking only two or three glasses of ale daily. Is subject to tremor of hands and tongue when fatigued or excited at any time; is rather dyspeptic. October 28th, complained of pain of back, and sleeplessness, and general debility, but appeared perfectly rational, saying that the cause of her not sleeping was that some actors had been sitting up late in the next house, singing and making a noise. I really thought it was true, until her children assured

me it was a delusion. As usual, when anything ails her, she is in a tremor all over; tongue clean, pulse weak, but not hurried, skin perspiring, bowels well open. Complains of pain and fulness of right side in region of liver, which she says feels swollen; the extent of dulness has increased. Is quite cheerful and happy. No cause for this attack discoverable. Ordered full stimulating diet and tr. opii min. xv 3tis hôris. Next day, pain of back was gone; other symptoms were worse; she was weaker and sick; saw cats, dogs, fires, etc. Still answers questions apart from the delusions quite rationally. Still smiling and merry. Not an hour's sleep last night. It was determined to try the plan fully, so the doses were doubled. Next day, gets worse and worse; has more delusion, but is as happy as ever. Next day, condition same; rather more pain in right side. The plan was now changed, her meat and stimulus were discontinued, and three grains of calomel were given. In three or four hours after taking the pill the delusions began to abate; three or four hours later, the bowels acted freely (they had been confined for three days before); very soon after she fell asleep, and slept for six hours continuously, having had, practically, no sleep for five nights. On awaking, the delusions were all but gone, and she speedily got quite well. In this instance, the depressing and disordering influence of the loaded state of the liver and bowels on the hemispherical ganglia is plainly apparent. The disorder was of the nature of a paresis, but cannot be attributed to anæmia of the centres. Dr. Tilbury Fox records a case in which symptoms identical with those of delirium tremens were brought on by exposure to cold and wet. The patient was a perfectly temperate man, aged 45, but he seems to have had an hereditary predisposition to cerebral disorder. Here, also, the nervous disorder was evidently of paralytic character, the functional power of the brain was evidently impaired, and the same is true of the following instance: A lady, who had been a very excellent and affectionate mother, displayed unequivocal symptoms of moral insanity. She continued in this state some time, and was at length restored by having a great number of stumps of decayed teeth extracted, which, however, did not seem to have caused any marked pain. In his excellent paper on symptomatology of worms, Dr. Heslop describes headache and giddiness as prominent symptoms. The headache is almost constant, and sufficiently severe, without being excruciating, to render life, if not a burden, at least unhappy. The giddiness is so severe that the patient often staggers about like one intoxicated, and when this symptom is

present to a less degree, there is still almost continuously a sense of confusion and insecurity, which renders walking a serious effort. Both these symptoms indicate, plainly, a state of depression, of partial paresis, of some of the encephalic centres. The influence exerted by the uterus on the nervous centres, even on those of the highest order, is very considerable, and, from the great variety of effects produced, demands specially to be noticed here. In some cases, the gravid condition of the organ evidently causes derangement and depression of one or more parts of the nervous system. Thus, it may produce severe frontal neuralgia, gastric hyperæsthesia of the most intense kind, chorea, hemiplegia, paraplegia, deafness, amaurosis, or a state of complete cerebral torpor in which the patient appears like a living automaton, and all indications of mind are in abeyance, or insanity. Instances of all these various forms of disorder are given by Dr. Lever, in his paper in 'Guy's Hospital Reports,' vol. v., 1847. The histories of several of the cases seem to make it highly improbable that the manifold symptoms could depend on anæmia of the nervous centres produced by arterial spasm. This conclusion is strongly supported by the fact that the same condition sometimes acts as a beneficial stimulus, improving a naturally irritable temper, and invigorating general or particular nutritive actions. Dr. Churchill states that pregnancy occasionally relieves mental derangement, and mentions having seen a lady who was in a state of confirmed melancholia, which disappeared entirely on her becoming pregnant. Asthma sometimes disappears during pregnancy, and digestion is occasionally more vigorous then than in the unimpregnated condition. I am acquainted with one remarkable case in which albuminaria, which had existed for at least fifteen months before pregnancy, ceased during its continuance, at the same time that the health improved and the body gained flesh, which had been observed in former pregnancies. Here, there can be no question that a beneficial influence was exerted on the renal plexus—an event which is more remarkable as the exact converse is the more ordinary occurrence."—*Med. Times & Gazette, and Dental Cosmos.*

The Sale of Poisons in Bombay.—A new Bill has been introduced into the Legislative Council of Bombay, to regulate and restrict the sale of poisons in the Presidency, in assimilation to the English Acts.—*London Lancet.*

ON FACIAL HEMIPLEGIA AND PARALYSIS OF THE FACIAL NERVE.

By WM. R. SAUNDERS, M.D., F.R.C.P.Ed., Physician to the Royal Infirmary of Edinburgh, and Lecturer on Physiology and on Clinical Medicine.

Centric and facial peripheral paralysis.—Dr. Todd's views.—Objections critical and clinical.

Since the discoveries of Bell, it has been well known that paralysis of the facial muscles may be produced by one or two causes. Either the palsy is due to a cerebral lesion (cerebral or centric facial hemiplegia,) in which case it is usually accompanied by hemiplegia of the limbs on the same side; or, occurring independently of cerebral disease, it is owing simply to lesion of the trunk or branches of the portio dura at some part of its course (peripheral facial hemiplegia, paralysis of the facial nerve, Bell's paralysis). These two kinds of facial palsy present many points of resemblance and of contrast, which are of considerable interest and importance. My present purpose is —1st, to direct attention to certain views in regard to them, which, although held upon high authority, seem to me to be erroneous; and 2d, to endeavor to explain some difficulties which have not yet received a satisfactory solution.

I. The opinions I refer to, which I believe to be mistaken, assert that in facial hemiplegia due to a cerebral lesion, the nerve which is usually paralysed is not the facial of the seventh pair, as many believe, but, on the contrary, is the motor portion of the fifth pair. This doctrine was long ago maintained by Mr. John Shaw, brother in-law of Sir Charles Bell; but it has been principally brought into notice and powerfully enforced in recent times by the late distinguished physiologist and physician, Dr. Todd in his Clinical Lectures on Nervous Diseases. Supported by his eminent authority, this peculiar view has been widely accepted in England, and has been latterly put forward as an established truth in our best text-books on the Practice of Medicine—*e.g.*, those of Dr. Watson and Dr. Aitken.* The subject is of sufficient importance to deserve investigation; and after careful examination of it, I am unable to consent to Dr. Todd's opinion. On the contrary, it appears to me that his peculiar views can be disproved, and the source of their error discovered, by an examination of Dr. Todd's own statements, and by investigating the facts supplied by clinical observation.

* Also, Tanner, "Practice of Medicine," Fifth Edition, published since this paper was written.

Examination of Dr. Todd's statements.—The symptoms of fascial palsy due to lesion of the seventh pair are too well known to need recapitulation. It will be sufficient to quote Dr. Todd's description of the phenomena of facial hemiplegia from cerebral disease, as distinguished from these of peripheral paralysis of the portio dura, in order fully to represent the principal facts, as well as his peculiar views on the subject. In his forty-first lecture, on Hemiplegia, p. 709 (second edition, by Beale), he says:—

"It is very necessary that you should be well impressed with the characters of facial palsy which accompanies hemiplegia, and that you should be able readily to distinguish it from that which arises from affection of the portio dura. Place the patient well opposite to you, and observe the condition of the face as it is perfectly quiescent. You will observe that *the paralysed cheek hangs*, and that the *angle of the mouth* on that side is *lower* than its fellow; the *cheek* is more or less *loose* and *flaccid*, in proportion as the paralysis is more or less perfect. If now you ask him to smile or speak, *the want of equilibrium of the face* becomes very apparent. The healthy muscles, being relieved of the antagonism of the paralysed ones, contract to a much greater extent than is natural; while the *palsied cheek remains quiescent*, or allows itself to be *drawn* slightly towards the mesial line.

He then alludes to the distortion of the features as observed by the patient or his friends and continues:—

"But, with all this, the patient can *shut both eyes well and open them*, and he can *move the cheek* so far as can be effected by the zygomatic muscles, and he makes a very fair *attempt* at pursing up the mouth for whistling; the last act, however, being *rather impaired* by the intimate connection of the buccinator with the orbicular muscle of the mouth. The *muscles of mastication* on the paralysed side act with *less power*, although *it seldom happens* in hemiplegia that their power is completely *destroyed. Doubtless much of this action is reflex*, and this explains the fact that *while the buccinator is very much paralysed and even wasted, the masseter and other masticatory muscles retain a considerable amount of power.*"

The conclusions which Dr. Todd arrives at from an examination of the symptoms described are thus given:—

"Your anatomical knowledge will explain all this to you: *the fifth nerve is more or less involved in, or influenced by, the paralysing lesion.*" And further on: "*The facial nerve, or portio dura, is not generally touched by the paralysing lesion in*

hemiplegia," although in a few cases "the muscles were weakened, as if the nerve participated slightly in the shock------In a physiological point of view," he adds afterwards "it is a very interesting inquiry how it happens that the fifth and ninth nerves are so frequently—nay, almost universally—paralysed in hemiplegia, while the portio dura escapes."—p. 711.

Notwithstanding the positive and decided terms in which Dr. Todd announces these conclusions, it appears to me that no physiologist or physician can read his description, just quoted, of the symptoms of facial hemiplegia, without perceiving plainly that, instead of supporting, they are opposed to the interpretation he puts upon them. For—

1st. Amongst the symptoms described, those of paralysis of the muscles supplied by the portio dura of the seventh pair are undoubtedly present.

It is anatomically impossible that the *hanging of the paralysed cheek*, *depression of the angle of the mouth*, *distortion of the features*, *exaggerated when the patient speaks or smiles*, could be produced by paralysis of the muscles of mastication, which are alone supplied by the fifth pair. These are symptoms of inaction of the facial muscles of expression, and necessarily imply paralysis of the nerve which supplies them with motion—viz., the seventh pair, and no other. On this point there is no room for doubt. It will be observed that Dr. Todd makes the qualifying statement, that the patient can move the cheek so far as can be effected by the zygomatic muscles, and can make an attempt at pursing up the mouth for whistling. But it is well known that in cerebral hemiplegia, the paralysis is seldom so complete as to prevent all movement in the parts affected; and further, we cannot conceive the action of the zygomatics to have been very apparent when the *cheek hung loose*, and remained *quiescent when the patient smiled*. The attempt at pursing the lips for whistling is also noted as "impaired,"—the impairment being ascribed, it should be remarked, to the connexion of the *buccinator* with the orbicular muscles of the mouth. The nature and extent of the paralysis of the buccinator and of the orbicularis palpebarum will, however, fall to be fully examined presently, and it will then appear what is really implied in this explanation of the impairment in whistling.

2nd. While the symptoms of paralysis of the motor seventh are, contrary to Dr. Todd's statement, undoubtedly present, those indicating paralysis of the fifth are not satisfactorily demonstrated.

It must be first noted that Dr. Todd looks upon the buccin-

ator as a muscle of mastication supplied with motor power by the fifth pair. The objections to this will be stated afterwards. Meanwhile we observe that the evidence adduced of motor paralysis of the fifth nerve consists in this, that the muscles of mastication (including the buccinator) "act with less power, although it seldom happens that the power is completely destroyed." For, "while the buccinator muscle is very much paralysed, and even wasted, the masseter and other masticatory muscles retain a considerable amount of power." It is not easy to understand, from Dr. Todd's point of view, how the marked distortion of the face which he describes could, if possible at all, be produced by so small an amount of paralysis of the muscles of mastication. Further, while he ascribes the distortion of the features to paralysis of the fifth, which, it can be shown that paralysis could not produce, he says nothing of falling or obliquity of the lower jaw, which that paralysis would certainly occasion. Finally, to account for the minor degree of masticatory paralysis (to which nevertheless he ascribes all the facial symptoms), and to explain the exemption of the masseter, &c., from the atrophy which effects the buccinator, he resorts to the extraordinary assumption that "much of the action" of the masticatory muscles (*i.e.*, of all except the buccinator) "is reflex"—a strange hypothesis, which the misunderstanding of the nervous supply of the buccinator, and the necessity of making his theory consistent, could alone have originated.

It is proper to add that in one case, that of Coulson, cited by Dr. Todd (p. 710), motor paralysis of the fifth nerve was observed, and was proved by wasting of the temporal and masseter muscles; but that this case, otherwise complex, was of an exceptional kind is sufficiently evinced by Dr. Todd's own statement already noticed, that in ordinary cases of hemiplegia, even when the buccinator wastes, there is no atrophy of the masseter and temporals. The exception, by its marked contrast, serves to prove the rule, which affirms the rarity of affection of the motor fifth in ordinary hemiplegia.

Clinical observation.—The evidence of clinical observation is no less opposed to Dr. Todd's views than the anatomical and physiological considerations which his own statements have suggested. I have carefully investigated the facial phenomena in cases both of peripheral paralysis of the portio dura and of facial hemiplegia due to cerebral disease, which have occurred in the wards of the Edinburgh Royal Infirmary under my charge. In all instances hitherto, I have found that in ordinary facial palsy of cerebral origin, the muscles of expression,

including the buccinator, were more or less affected; while the action of the masseters, temporals, and pterygoids was unimpaired. The usual facial distortion was exhibited in a greater or less degree, according to the amount of the paralysis, although it rarely approached the completeness usually seen in peripheral paralysis from lesion of the nerve-trunk. The movements of smiling and of labial articulation were impeded on the paralysed side; mastication was rendered difficult so far as the action of the buccinator was concerned, but the proper masticatory movements of the jaw were vigorous and equal on the two sides. I could observe no defect or want of force in the muscles of the jaw on the paralysed side so that the weakness of the buccinator presented a marked contrast to their condition. There was no hanging down, and no lateral displacement or obliquity of the inferior maxilla, either at rest or during mastication. The mesial line between the lower incisors correspond accurately to that in the upper jaw; while on the contrary, the middle line of the lips was drawn to the sound side. As usually occurs in cerebral hemiplegia, the orbicularis palpebrarum muscle was little affected; the eyelids on the paralysed side could not be closed so firmly as on the opposite side, but the voluntary closure could take place. and the act of winking was unimpaired. Of this speciality of the orbicularis palpebrarum muscle I shall afterwards attempt an explanation. For the present, it is sufficient to observe that, with this exception, the phenomena of cerebral hemiplegia of the face are entirely similar to those of facial paralysis, produced by lesion of the seventh nerve itself, and, as in the latter, are confined to the muscles of expression, including the buccinator, and do not involve the masticatory muscles (masseter, temporal, pterygoid) supplied by the motor fifth. After a candid investigation of such cases, it appears to me as if no reasonable doubt can remain that in cerebral hemiplegia, when the face is affected, it is the motor branch of the seventh pair, and not (as Dr. Todd would have us believe) the fifth nerve, which is paralysed of motion. It is unnecessary and would be tedious to record individual cases; I shall content myself by referring to one of hemiplegia depending on cancer of the brain, in which the above facts were carefully noted, and the particulars of which are briefly referred to in the report of the Proceedings of the Medico-Chirurgical Society of Edinburgh, before which I exhibited the morbid specimen at their meeting on the 1st March, 1865; commenting at the same time upon this and other similar cases in their bearings on Dr. Todd's views. I beg also to refer, in confirmation of the clinical

evidence, to the cases of diseases of the nervous system recently published by Dr. Hughlings Jackson, in the first volume of the Clinical Lectures and Reports of the London Hospital, 1864. I am much indebted to Dr. Jackson for lately directing my attention to his cases and remarks on the subject.

I shall only add, that, while Dr. Todd's views have been readily accepted in England, I am not aware of any Continental author who has adopted or who has even appeared to be acquainted with them. The current doctrine abroad is the one which the preceding considerations lead me still to look upon as correct—that in cerebral hemiplegia, as in peripheral face-palsy, it is the motor seventh nerve which is affected. At the same time it should be observed that foreign authors have recognized, but have not explained, the differences in the phenomena of the centric and peripheral forms of facial paralysis which formed the foundation of Dr. Todd's peculiar views.

Examination of difficulties in regard to buccinator and orbicularis palpebrarum muscles.—Loss of galvanic contractility in muscles in peripheral hemiplegia.—Other points requiring investigation.

II. It now remains to inquire what were the points of difficulty in the phenomena of facial hemiplegia which induced so distinguished an observer as Dr. Todd to adopt his peculiar views, and by which his opinions are still by some conceived to receive support. It is apparent, from what has preceded, that these difficulties are chiefly two: one of them science has long since solved, while the other still remains to be explained. The first anomaly is the affection of the *buccinator* muscle, which is paralysed both in palsy of the portio dura and in cerebral hemiplegia of the face; the second in the partial exemption of the *orbicularis palpebrarum* muscle, which is affected in peripheral paralysis of the portio dura, but escapes injury in the facial palsy of cerebral origin.

The *buccinator* muscle stands in the peculiar anatomical relation that it is supplied both by the fifth and by the seventh nerves; and, till recently, anatomists regarded the buccal branch of the fifth as either the only or the chief motor nerve of this muscle. Dr. Todd held the view that the buccinator received motor branches from both nerves, and he accounted for the double supply on the hypothesis that the facial was the motor nerve of the buccinator as a muscle of expression, while the fifth communicated the motor influence for mastication only. This hypothesis led to serious confusion and difficulty, which

Dr. Todd felt, but from which he could not extricate himself. He confesses himself unable to understand why the buccinator muscle should be completely paralysed, even of its masticatory function, in lesion of the portio dura, which he held to be its motor nerve for expression only; and he was at no less loss to know why it was paralysed, as a muscle of expression, in what he assumed to be paralysis of the fifth pair, in cerebral hemiplegia. Of these, which he calls "curious facts," he hints at a possible explanation, in accordance with Marshall Hall's views, that the fifth nerve might possess a cerebral and the seventh a spinal character; but he at once rejects the solution as "inadequate to explain the complete palsy of the buccinator muscle when the fifth is the only nerve affected, as in common hemiplegia" (p. 649), and leaves the "facts" unexplained, and apparently inexplicable.

It is now more than twenty years since the error and difficulty in regard to the buccinator muscle was clearly corrected and explained, on the basis both of anatomical and physiological science, and of clinical observation, by M. Longet in his celebrated work "Anatomie et Physiologie du Systeme Nerveux" (Paris, 1842, ii., p. 187, and p. 408 *et seq*).* The experiments of succeeding physiologists, and the observations of physicians, have confirmed M. Longet's statements; and this point of physiological anatomy is so far settled that it is now usually accurately stated in our best ordinary text-books of physiology. The correct account is that the seventh pair is the only motor nerve of the buccinator muscle for all its actions, whether of expression or of mastication; and that the fifth pair supplies it, not with motor, but with sensory fibres. It is equally strange that Dr. Todd should have been unacquainted with Longet's observations, or that he should have entirely omitted to consider them. But it is, nevertheless, the case that not only Dr. Todd, but the principal anatomical and physiological authors and lecturers, with few exceptions, continued up to the last few years, and many still continue, to teach the erroneous doctrine that the buccinator muscle is supplied with motion by the fifth pair, and not by the seventh.† Amongst the few who taught correctly, I must not omit to mention my friend Dr. Struthers, now Professor of Anatomy in Aberdeen, who informs me that, at an early period, he became convinced, by the independent observation of clinical cases of paralysis of the portio dura, that

* Also previously by Mayo, 1823; and Volkmann, in Muller's Archiv, 1840.

† Physicians also commonly make this mistake; even the learned and accurate Hasse, in Virchow's Handbuch der Path u. Ther., Bd. iv., 343.

the motor supply of the buccinator was derived exclusively from that nerve. He has, accordingly, always so taught in his lectures, and had made a collection of clinical cases illustrative of the point, the notes of which he has obligingly forwarded to me. Not to dwell unnecessarily on this point, however, let it be understood plainly, that *the buccinator muscle is interrupted in all its functions, whether of expression or of mastication, whenever the portio dura is paralysed; it is unaffected, and all its actions are preserved, in motor paralysis of the fifth pair.* It will be perceived that this completely explains the difficulties in regard to the buccinator which Dr. Todd considered insuperable; but, at the same time, it entirely subverts his notion that paralysis of the buccinator in cerebral hemiplegia is due to lesion of the fifth nerve, and it destroys one of his main arguments for maintaining that the fifth nerve is commonly affected in that form of paralysis.

In regard to the orbicularis palpebrarum muscle, another source of difficulty appeared. In facial palsy from lesion of the portio dura, the orbicularis palpebrarum is almost invariably paralysed; the voluntary closure of the eyelids, the usual movements of winking and the shutting of the eye when the conjunctiva is irritated, all are more or less interrupted or prevented. On the contrary, in the great majority of cases of cerebral hemiplegia of the face, the orbicularis palpebrarum is not materially affected; the act of winking and of voluntary closure of the eyes continues on the paralysed as on the sound side, with the small exception that the voluntary closure is usually weaker on the palsied side. These symptoms, indeed, form one of the best diagnostic marks between centric and peripheral paralysis of the face: the hanging cheek, with wide-open, staring, unwinking eye, denotes lesion of the portio dura; the flaccid face, with the natural position and motions of the eyelids, is the sign of cerebral lesion, and indicates a more serious disease. This valuable distinction is said to have been first noted by Recamier,* its patho gnomonic value is insisted on by Dr. Todd (p. 644), and it is well known to every clinical observer. There can be but little doubt that the usual immunity of this orbicular

* Duchenne: Electrisation Localisee, 2e Edit., 1861, p. 365, note; where it is also stated that M. Duplay, in *l' Union Medicale* of Aug. 28th, 1854. "De la paralysie faciale, produite par une hemorrhagie cerebrale chez les vieillards," has reported several cases of hemiplegia, in which a cerebral cause was demonstrated on dissection, and in which nevertheless the orbicular muscle of the eyelids was paralysed. I regret that I have no means of access to this paper, as its study would probably be peculiarly interesting and instructive in relation to the present inquiry.

muscle (which is supplied by the seventh pair) in cerebral hemiplegia affecting the face, while it is so conspicuously paralysed in the peripheral paralysis of the portio dura, was one of the main reasons which led Dr. Todd to assume that in the former case it was not the seventh but the fifth nerve that was at fault. And we have heard the same fact alleged recently in support of Dr. Todd's opinions, or at least as still unaccounted for on the supposition that the seventh is the nerve affected in cerebral hemiplegia. It is important therefore to search for a solution of the difficulty.

In examining this question, it is necessary to remember that one reason why the action of the orbicularis palpebrarum is not arrested in cerebral hemiplegia is, because ordinary winking is a reflex and not a voluntary act. When the motor influence of the brain is withdrawn from a part, the rule is, that the voluntary movements cease, but the reflex action persist. Winking continues therefore in cerebral hemiplegia of the face after the mobility of features has ceased, for the same reason that respiratory movements of the intercostals and diaphragm are preserved in the cerebral hemiplegia, which deprives the limbs of voluntary power. On the other hand, both voluntary and involuntary closing of the eyelids is prevented, and the orbicularis palpebrarum and other muscles are completely paralysed in lesion of the portio dura, because the efferent conduction of all motor influence, reflex and voluntary alike, is then interrupted. In the same way, spinal hemiplegia is distinguished from cerebral by the muscles of the thorax being paralysed in conjunction with those of the limbs, because in the spinal disease the tracts for reflex action are injured simultaneously with the conductors of volition.

This explanation which accounts for part of the phenomena, may be extended, however, beyond the simple reflex actions, as follows:—

The facial motor or portio dura of the seventh pair, considered as a musculo-motor nerve, contains within its common trunk fibres serving different purposes, and provided therefore with different capacities of action. These fibres may, for our present inquiry, be divided into—1st, voluntary motor fibres, by which the voluntary movements of the features are performed, and by which especially labial and buccal speech and mastication are accomplished; 2nd, emotional fibres, by which the features express the passions more or less involuntary; 3rd, reflex motor fibres, which are involuntary for the act of winking and for the movements of the nostrils in respiration.

According to the principles of physiology, these different sets of fibres derive their peculiar functions, not from any special properties of the nervous fibres themselves, but solely from the nature of their origin or central connexions in the brain or medulla oblongata. Thus, although anatomy cannot yet trace individual fibres to their primary source there is good reason to believe that the voluntary motor fibres originate from a cerebral centre of conscious volition: those for expression must be connected with the cerebral organs of the emotions; while those for reflex action arise, more or less independently of the cerebral hemispheres, from the medulla oblongata, in connexion (*inter alia*) with the sensory branches of the fifth pair, with which they are associated in the act of winking.

If these propositions are admitted, it is clear that, in lesion of the nerve-trunk in which all the fibres indiscriminately are equally liable to be affected, not only voluntary, but emotional and reflex motions will be suspended. But when the cause of the paralysis is cerebral, the origin or course of certain sets of fibres may alone be involved by the lesion, while that of other sets, being in a different part of the encephalon, may entirely escape direct injury; and the symptoms will vary with the special seat of the central disease. The voluntary and emotional actions, either or both, which have their origin and in the cerebrum, will usually suffer; while the fibres for reflex action which have their source in the medulla oblongata, may be expected to retain their power. The play of the features will be lost, and buccal and labial speech and mastication impaired; but the natural position of semi-closure, and the involuntary winking of the eyelids will be preserved. In short, as there are three sets of fibres to be taken into account, so there are three species of paralysis of the facial nerve: voluntary motor paralysis, emotional parlaysis, reflex paralysis which may or may not co-exist.

In tracing out these views, which to some may appear too theoretical, I was not aware that any cases had been observed of centric facial hemiplegia, where the voluntary and emotional actions had been separately and independently paralysed. On referring to Romberg's work, however, I found two very remarkable cases quoted of this description. In the one case reported by Magnus,* the voluntary movements of the face were entirely lost, while the facial muscles still acted powerfully under the influence of emotion. The other case by Stroymeyer (of which I have been unable to see the original in Casper's

* Muller's Archiv for 1837, pp. 258-266, and p. 567.

"Wöchenschrift für die Gesammte Heilkunde," (1837, p. 33) is the converse of Magnus's: there was paralysis of expression and of respiratory movements on the right side of the face, with the usual facial distortion, increased by emotions or talking: but the voluntary power remained, for the patient was as able to "control the muscles on this side as those on the left. She could move the angle of the mouth, dilate her nostrils, wrinkle her forehead, and contract her eyebrows at will," &c. Magnus explains this case by supposing that the emotional impulse being the stronger, could overcome an obstacle to nervous conduction which resisted the effort of volition. But Stroymeyer's case is opposed to such a supposition. On the theory of separate nerve-centres, such as I have indicated above, both cases would be readily explained.

I should not wish to urge these theoretical views too far, nor to attach more value to them than this, that they afford an explanation in accordance with the present state of nervous physiology and pathology, and still more that they suggest further inquiry into facts, especially dissections of cerebral hemiplegia, which may, in confirming or confuting them, extend our knowledge.

Whether explicable on the principles just referred to or not, it is necessary to attend to the fact, that while the facial palsy due to lesion of the nerve is usually complete, that caused by crebral disease is nearly alway incomplete, both in the number of muscles affected and in the degree of their paralysis; the affected muscles are weakened and disabled, but have not wholly lost their power. The same partial and incomplete character is observed in cerebral hemiplegia of the limbs, the arm being usually more affected than the leg, &c. In the face it is usually the lips and cheek that are most affected, causing difficulty of articulation and mastication, and distortion on smiling; although careful observation will show at the same time diminished power in closure of the eyelids, wrinkling of the nose, &c. The partial and incomplete nature of the paralysis is further shown by the stimulus of galvanism: the galvanic contractility of muscles is greatly impaired, and is soon entirely lost, in lesion of the portio dura, while it is retained, or is only slightly enfeebled, in crebral hemiplegia. The same difference of susceptibility to galvanic stimulus is observed in limbs, according as the brain or a nerve-lesion is the cause of the paralysis. Such facts are not inconsistent with the theory of different centric origin of several sets of fibres bound up together in the same nerve-trunk, and they afford no ground for supposing that it is

the fifth nerve, and not the seventh, which is paralysed in the ordinary cases of cerebral hemiplegia involving the face. They merely indicate that a centric lesion may involve a part only of the origins of the nerves affected, and may damage only, and not destroy even these.

Having thus discussed, so far as my present opportunities admit, the points of difficulty which had occurred to Dr. Todd and other observers, I have only further to remark, that not only does it appear certain to me that in facial hemiplegia it is the seventh, and not the fifth nerve, which is affected, but I have hitherto failed to observe any clinical evidence that the fifth pair is at all implicated in ordinary cases of facial hemiplegia.* Complicated cases occur in which the fifth and the other cerebral nerves, one or more, are involved in an intra-cranial disease; but in the ordinary cases of cerebral hemiplegia of the face, to which Dr. Todd's statement alone refers, the rule is the reverse of what he asserts: the facial is paralysed, the fifth nerve is exempt.

There are certain other points of interest which I shall not enter upon, but to which I should wish to call the attention of physiologists and of clinical observers. These are,—

1st. Why the contractility of muscles under the galvanic stimulus is speedily lost in peripheral paralysis of the portio dura, while it is retained in cerebral hemiplegia of the face? What bearing has this fact on the doctrine of the *vis insita?*

2nd. Clinical evidence of reflex paralysis of the seventh pair from impairment or lesion of the sensory portion of the fifth pair.

3rd. Why, and under what conditions, is facial paralysis succeeded by contracture or tonic spasm of the muscles previously paralysis?† I had recently under my care a patient affected with peripheral paralysis of the facial nerve, in whom the affected muscles had completely lost their contractility under the stimulus of galvanism, and in whom nevertheless, the previously palsied muscles are now the seat of contracture, as much over-shortened as they were previously over-lengthened. There has been, at the same time, some return of voluntary power in them. A casual observer seeing him for the first time, would think that the natural side of his face (the left) was paralysed, and that the opposite one exhibited the usual dragging of the features to its own side. But on voluntary or emotional action,

* Romberg, however, describes motor and sensory paralysis of the fifth pair as frequent in recent cerebral hæmorrhage. I know no evidence of this.—Sydenham Society Transactions, vol. ii., p. 289; and Muller's Archiv, 1838.

† Spasmodic tic of Marshall Hall, who first described it.

the motor power is found to be natural on the elongated left side of his face, and deficient on the shortened right one. Though the right eyelids are closer together than the left ones, he cannot by any effort close them completely, while they readily shut on the opposite side. What is the meaning of this contracture? Is it a return of muscular power in excess, or a kind of *rigor mortis?* It could only be the latter if it preceded wasting.

4th. The influence of the facial on vascularity (vaso-motion) and secretion. I have not in my cases seen any good examples of this.

5th. The influence on the palate, of which I have seen some marked examples. (See *Edinburgh Medical Journal* for August and September.

These, and several other points which this subject presents, have not been sufficiently investigated, and both scientifically and practically they are interesting and important.—*London Lancet.*

ARTICLE VIII.

MURIATE OF AMMONIA IN IRITIS.

By JOS. S. HILDRETH, M.D., Chicago, late Surgeon in charge of the Desmarres (U.S. Army) Eye and Ear Hospital.

Iritis, like pneumonia, is regarded by some authors as a self-limited affection; which theory is undoubtedly correct, if certain indications are fulfilled by treatment, otherwise, the tendency is to form mechanical and pathological complications that may compromise the eye itself. Though the exciting cause may be rheumatic, syphilitic, or scrofulous, yet something more than treatment of the general disorder will be required. The local danger, first, must be controlled, and, at the same time, as far as practicable, the existing general disturbance. The eye relieved, constitutional treatment next demands attention.

To understand the pathology, and employ the means most favorable to successful treatment of this affection, therefore, becomes of the highest importance. The subject may be considered under three heads:—

1st. Prominent characteristics of iritis, viz.:—

Change of color, swelling, and injection of the iris.

Diminution, or loss of movement of the pupil, which frequently becomes small, irregular, and rough.

Exudations between iris and capsule, into the pupil, and often upon the surface of the iris.

Hypopion, and epauchement of blood into anterior chamber.

Loss, more or less marked, of transparency of cornea, and aqueous humor.

Injection of vessels of sclerotic and conjunctiva around the cornea.

Pain in the eye, in and about the orbit, especially at night.

Fever, headache, insomnia, and other general disturbances may be well marked, or entirely absent.

2d. Prominent effects to be obtained in treatment, viz.:—

Dilate, and so maintain, the pupil until the termination of the disease.

Prevent hypopion, exudations, and epauchements, and promote their absorption when existing.

Facilitate resolution of the congestion and inflammation of the parts.

Relieve the local and other pain and disturbance of the system.

3d. Treatment.

Without dwelling upon the various means that have been, and are, employed in healing this affection, I shall pass at once to those I have found most beneficial.

If the local congestion be great, and the state of the patient will allow it, apply from six to twelve leeches to the temples, or cups.

Instillations of atropia (gr. iv, ℥j,) two or three drops every fourth or sixth hour, until the pupil dilates, if there be no mechanical obstacle; after it is dilated, one drop night and morning, and, finally, one drop daily, to the decline of the disease, will be sufficient. In some cases, more frequent instillations may be found necessary, or the strength of the solution can be increased. But care must be taken to avoid *atropinism* and excitement of the conjunctiva.

Should the state of the gastro-intestinal canal require, give a

suitable eathartie. If the stomaeh be very irritable, it must be allayed by appropriate means.

Morphia, eodein, or extraet of Indian hemp, the first in $\frac{1}{4}$ grain, the seeond in $\frac{1}{2}$ grain, and the last in grain doses, to allay pain, if neeessary.

Exhibition of muriate of ammonia, as follows:—

If the eye, or parts about it, be painful, espeeially when loeal depletion and atropia fail to afford relief, 20 grains of muriate of ammonia may be given every half-hour, till one or two draehms have been taken. This modifies, and frequently eontrols, these symptoms. Congestive eephalalgia requires similar, and nausea small, doses.

If the pain is not relieved, or only partially so, nareoties should be given *pro re nata*, and the use of muriate of ammonia, in two grain doses, eontinued every two hours, exeept at night, or oftener, aeeording to the gravity of the symptoms, until the acute stage has passed, after whieh two or three times daily will be sufficient.

Cases not aeeompanied by pain should be treated, from the commeneement, by small doses. If the throat be dry, add one grain of ehlorate of potassa.

Exeessive transpiration must be eontrolled by appropriate means.

For noeturnal pain, administer large doses every half hour, as deseribed above, aeeompanied or followed by nareoties, if neeessary.

When leeehing is inadmissible, and, in absenee of meehanieal eauses, the pupil refuses to dilate, though there be no pain, commenee with large doses also.

The following mixture is usually aeeeptable:—

℞. Ammoniæ Muriat., ---------- ℥j.
Syrupi Auranti, ---------- ℥ss.
Aquæ, ---------- ℥iijss.

M.S.A. Sig. one teaspoonful.

Larger quantities had better be administered in enough pure water to avoid irritation of the stomaeh.

In ehronie cases, two grains, three times daily, will be suffi-

cient. With syphilitic complications, the bichloride of mercury; with rheumatic and scrofulous, colchicum, cod liver oil, and other suitable remedies may be given at the same time.

Under its influence, engorgement of the iris is diminished; absorption of hypopion, sanguineous epauchement, and exudation promoted; and neuralgic symptoms modified. Fever, heavy and painful sensations of the head, scantiness of urine, and constipation are controlled. Nausea is usualy relieved, and the effects of narcotics would, in some cases, seem to be promoted.

The action of this salt, in the treatment of iritis, may be summed up as follows:—

a. Large doses modify neuralgic pain, congestive cephalalgia, and frequently act as a laxative.

b. Small doses exert an influence on the capillary, glandular, and lymphatic systems which facilitates dilatation of the pupil, resolution of the inflammation, absorption of exudations, hypopion, etc.

c. It allays nausea, unless the dose be too large, or the stomach very irritable.

d. Fever, coated tongue, and other constitutional disturbances are relieved.

e. It appears to facilitate the action of narcotics, and produces no irritation of the conjunctiva.

The value of mercury, quinia, iodide of potassium, oil of turpentine, and some other remedies, in the treatment of this affection, is to well known to require comment. Yet, from no single remedy, except belladonna, have I been able to obtain so satisfactory results, as from the one specially dwelt upon in this article.

Its admissibility in many conditions of the system, wide range of action, facility and safety of administration render it peculiarly applicable to this class of cases.

The bromide of ammonia has, in some respects, properties quite similar.

From 30 to 60 grains, well diluted, exert a decided hypnotic action, and small quantities produce some of the effects of the muriate. For certain patients, I think the former preferable

in large doses to the latter; but as a resolvent, present experience favors the *chlorine* salt.

Thorough and carefully conducted clinical observations, of over three years, have demonstrated the truth of the above. During this period, every known form of the disease has fallen under my care, whilst military discipline has afforded an opportunity to follow each case from the commencement of treatment to its close.

Feb. 5, 1866.

Book Notices.

Obscure Diseases of the Brain and Mind. By Forbes Winslow, M.D., D.C.L., Oxon, &c., &c. Second American, from the Third and Revised English Edition. Philadelphia: Henry C. Lea. Price $1.25—pp. 483. 1866.

This work has been before the profession long enough to be well known. The present edition is published in excellent style, and contains evidence of having been carefully revised. The author's style is pleasing, and the topics he discusses are of very great importance. The work is divided into twenty-five chapters, embracing the following topics:—

1. Introduction, on the Importance of Early Attention to, and Early Treatment of, Affections of the Brain and Mind.
2. Morbid Phenomena of Intelligence.
3. Premonitory Symptoms of Insanity.
4. Confessions of Patients after recovering from Insanity; or the Condition of the Mind when in a State of Aberration.
5. State of the Mind, when recovering from an Attack of Insanity.
6. Anomalous and Marked Affections of the Mind.
7. The Stage of Consciousness.
8. Stage of Exaltation.
9. Stage of Mental Depression.
10. Stage of Mental Aberration.
11. Impairment of Mind.

12. Morbid Phenomena of Attention.
13. Morbid Phenomena of Memory.
14. Acute Disorders of the Memory.
15. Chronic Affections of the Memory.
16. Perversion and Exaltation of Memory—Memory of the Insane.
17. Psychology and Pathology of Memory.
18. Morbid Phenomena of Motion.
19. Morbid Phenomena of Speech.
20. Morbid Phenomena of Sensation.
21. Morbid Phenomena of Special Senses.
22. Morbid Phenomena of Vision, Hearing, Taste, Touch, and Smell.
23. Morbid Phenomena of Sleep and Dreaming.
24. Morbid Phenomena of Organic and Nutritive Life.
25. General Principles of Pathology, Diagnosis, Treatment, and Prophylaxis.

As we cannot take time to analyze the work or do justice to it as a critic, we simply quote so much of the table of contents as will give the reader a proper idea of the subjects discussed. It is an interesting volume that will amply repay for a careful perusal by all intelligent readers.

For sale by W. B. Keen & Co., 148 Lake St.

Experimental Investigations in to the Actionand Uses of the Bromide of Potassium. By Roberts Bartholow, M.D., Prof. of Physics and Medical Chemistry in the Medical College of Ohio.

This is a little pamphlet of 16 pages, the contents of which were first published in the *Cincinnati Lancet and Observer*. The detail of the author's experiments with the bromide of potassium are interesting and instructive. The following are the conclusions at which he arrives in relation to the *modus operandi* and therapeutic action of the drug:—

After a careful survey of all the facts we are able to construct a theory of the action and *methodus medendi* of the bromide of potassium. I put this in the shape of the following conclusions:—

1. The bromide of potassium acts by absorption into the blood;

2. Its effects are expended upon the nervous centres, or the cerebro spinal axis;

3. Sedation of the heart and circulation, and the various local sedative effects are secondary results of the impression made upon the nervous centres;

4. Its physiological effects are not very decided, and are easily modified by any local disturbance;

5. Its therapeutical action is still more decidedly influenced by local morbid processes;

6. It is indicated where a sedative to the nervous system is required—in insomnia; too great reflex excitability; nervous and spasmodic affections of the larynx and bronchi; sexual excitement; and in an irritable state of the sexual organs;

7. It will be effectual in the foregoing conditions, in proportion to the degree in which structural lesions are absent, or in other words, in proportion to the degree in which these morbid states are functional rather than organic.

Dr. Bartholow thinks the bromide of potassium less efficient as an alterative than the iodide.

LECTURES ON THE DISEASES OF INFANCY AND CHILDHOOD. By CHARLES WEST, M.D., Fellow of the Royal College of Physicians; Physician to the Hospital for Sick Children. Fourth American, from the Fifth revised and enlarged English Edition. Philadelphia: HENRY C. LEA. 1866.

The merits of a book that has passed through four editions within a few years, should be well known to the profession at large. This work is a good-sized octavo volume of 654 pages, printed on good paper and fair type. The author had unusual opportunities for observation in relation to the diseases of infancy and childhood, and seems to have possessed all the requisite qualifications for improving his opportunities to good advantage. Hence, we have, in the present edition of his work, one of the very best treatises on those diseases accessible to the student and practitioner. It is worthy of a place in every physician's library.

For sale by W. B. KEEN & Co., 148 Lake St. Price $4.50.

Editorial.

Our State and National Medical Associations.—In our issue of last month, we called the attention of our readers to the fact that the approaching Annual Meeting of the Illinois State Medical Society would not be held until the first Tuesday in June, on account of the next meeting of the American Medical Association being held in Baltimore, on the first Tuesday in May.

In the present number of the Examiner will be found the official notice of the Permanent Secretary of the Association, containing a list of the Committees expected to report at that meeting. We are also informed that preparations are already being made to insure an unusually large representation at the next meeting from all the Eastern, Middle, and Southern States, and that the coming meeting will probably be the largest and most interesting one ever held. Will our professional brethren throughout the North-western States see that the portion of the profession they represent is not behind in its appreciation of either social unity and enjoyment or scientific advancement.

The first Tuesday of May will soon come. Let the local societies lose no time in appointing their delegates. And let the delegates appointed by the State Medical Society last year, remember that they will be expected to do more than have their names reported to the Secretary this year. Every one of them should regard it as a duty to be in Baltimore at the coming meeting.

Chicago Medical Society.—The regular meeting of this Society, on Friday evening, Feb. 2d, 1866, was one of more than ordinary interest. Dr. J. P. Ross, one of the physicians to the County Hospital, presented, as pathological specimens, the stomach and liver of a patient who had died two days previously, from cancerous disease of those organs. The stomach was much contracted in size, and at and near the pyloric orifice its coats had undergone a well-marked cancerous degeneration,

and had attained a thickness of an inch or more, but the pylorie orifice itself was not obstructed by contraction or concentric thickening of the parts. The liver was considerably increased in size, of a deep reddish-brown color, and contained several cancerous masses, some of which were two inches in diameter. The body was extremely emaciated, the skin sallow, but no important evidences of disease were found in any of the organs, except the stomach and liver. The man had been admitted into the hospital about two weeks before his death, in a state of extreme exhaustion. This, with a natural mental imbecility, rendered it impossible to obtain from him any account of his history or symptoms previous to his admission; and the friend who brought him to the hospital gave no information. During the two weeks he was in the hospital, he manifested a decided aversion to taking food of any kind, and took but little except wine and water. But he made no complaint of pain, or nausea, or vomiting, by which any serious disease of the stomach could have been suspected. The chief symptoms were mental drowsiness and extreme physical exhaustion. Dr. Ross stated that the diseased portion of the stomach and liver had been examined under the microscope, and were found to contain the cells with large nuclei and nucleoli, usually regarded as characteristic of cancer. Those in the liver were smaller than in the stomach. The case elicited some discussion, which was participated in by several members.

Dr. T. D. Fitch described the *post mortem* appearances of a case which had been recently the subject of a coroner's inquest. The subject was a man who had evidently been drinking liquors, and had been forcibly pushed out of a disreputable house, and immediately taken, together with the inmates of the house, to the Armory by the police. In a very few minutes after his arrival at the Armory he was found to be dead. The *post mortem* examination revealed no marks of violence on his person, and no evidences of disease, except in the intestines and brain. The transverse colon, near the left angle, was very much contracted for three or four inches, it then became abruptly distended to a great degree and turned forward so as to lie in

front of the omentum, for a distance of nine or ten inches. It then turned back to its normal position and again became much contracted for several inches. The coats of the intestine, especially in the contracted portions, were thick and dense, while the distended portion was filled with gas. There were no appearances of inflammation in any part of the digestive organs, except the mucous membrane of the stomach, which presented that reddened and vascular condition generally induced by the habitual use of intoxicating drinks. The contents of the stomach emitted a very strong aromatic odor, which was supposed to arise from his having drank spiced liquors. On opening the cranium, some apparently old adhesions were found between the membranes and several points of ossific deposit in the dura mater. The vessels of the brain were congested, especially the lower part of the anterior lobes and the upper part of the medulla oblongata. There were no effusions of serum, either upon the surface or into the ventricles, and no extravasations of blood. On raising up the anterior lobes, about two drachms of semi-fluid or gelatinous substance were found lying over the ethmoid bone. On removing this, the bony plate was found denuded of its membrane and in a carious condition. It was proved before the coroner that the man had recently purchased an ounce of laudanum and some sugar-coated pills containing each one-quarter of a grain of morphine. The vial was found empty, and a large part of the pills gone, but there was no direct proof that he had taken either of them, and there was no smell of laudanum in the contents of the stomach. And, yet, the verdict of the coroner's jury was, that the man died from an overdose of laudanum taken by himself. If we assume, however, that the man was able to stand up and walk when he was pushed out of the saloon, and that he died in half an hour afterwards, it would militate strongly against the idea that the death was caused by any preparation of opium. From the condition of the brain and its membranes, the death is quite as likely to have resulted either from the excessive use of alcoholic drinks or from a sudden apoplectic congestion of the base of the brain, as from opium.

Several other cases were related, and an interesting discussion was continued until the hour of adjournment.

Case of Cerebro-Spinal Meningitis.—We copy the following letter, as it contains an interesting account of one of the most fatal forms of disease. In regard to the treatment, we will only remark that, if the case had come under our care, we would have given less calomel, and, in addition to the other measures, have given a solution of the permanganate of potassa freely:—

West Point, Lee Co., Iowa,
January 11th, 1866.

Professor N. S. Davis, M.D.,

Dear Sir:—I herewith send you the report of a case of cerebro-spinal meningitis, its treatment, and result. It would not only be to my gratification, but to that of several members of the profession here, if you would state your opinion of the case, and treatment employed.

Mrs. B., *æt.* 48, bilious lymphatic temperament, had been to a social gathering at the house of one of her friends, on the evening of the 29th of December, 1865. After her return, while preparing to retire for the night, she was attacked with "choking" sensation, pain, and severe cramping in the occipital and post-cervical regions. Her husband immediately went for medical aid, Dr. Sala, the family physician, (with whom I have the pleasure of being associated in practice,) returning with him. On examination, the pupils were found to be strongly contracted, and the head violently drawn backward. Respiration slower and fuller than natural. Pulse 120. Head and general surface cold. Complained of very severe pains in the back of her head and neck. Her spine was immediately rubbed with a very strong chloroform liniment, and a large blister of cantharides applied. At the same time, gave her hyd. chl. mit. grs. xxx.

The next morning (Dec. 30th,) I saw the patient for the first time, with Dr. Sala. Her condition was about the same as on the previous night, but we noticed paralysis of the left side, which had taken complete possession of the left arm, and was

progressing slowly to invest the whole of the corresponding side. She also complained of severe pain in the right anterior cerebral region. Tongue coated with a thick, ash-colored fur, and cannot answer questions intelligibly. The blister was now removed, and an ointment of belladonna was substituted. At the same time, employed the hyd. chl. mit. in doses of grs. iij, every two hours, together with a strong solution of chlorate potash, and sinapisms to limbs and feet.

12 M.—Paralysis has extended to left limb and left side of face. Pulse now about 86, and of a remarkable intermittent character; head and face still cool; pupils fairly dilated. Renewed belladonna ointment, and continued the hyd. chl. mit.

4 P.M.—Deglutition is becoming impaired, but no change for the better.

7½ P.M.—Dr. ATKINSON, of Dover, Iowa, called to see patient in consultation. He has had considerable experience with the disease. Expressed himself satisfied with the treatment employed, and recommended perseverance in present management of the case.

11 P.M.—Reaction was setting in. Face flushed and head hot. Apply cold during night.

Dec. 31st, 7 A.M.—Head and face still hot, with general febrile symptoms. Respiration carried on by right lung entirely. Were preparing to apply the ice-cap, when color left her face, and the head became cool as during the previous day. Employed now, in addition to former treatment, the tinct. cantharides, in doses of gtt. xxv, every hour.

10 A.M—The paralytic expression of left side of face is disappearing, and she moves the thumb and fingers of the left hand somewhat, but still does not show any sensibility to external impressions, until I removed the belladonna ointment from her neck, when she threw up her right hand and moaned. Applied the ung. hyd. to blistered surface, to get the alterative effects as soon as possible. As the bowels had not moved, ordered an enema of

℞. Ol. Ricini,---------- ℥ij.
Ol. Terebinth.,---------- ℥j.
Aqua, ---------- oj.

3 P.M.—As no movement of the bowels had yet ensued, ordered second enema, and the addition of strychnia sulph. gr. 1-20 to each powder of hyd. chl. mit. In about 15 minutes after second enema had been given, she had three copious, bile-colored discharges, in rapid succession, which seemed to cause an improvement in her symptoms. Pulse now about 86 per minute, firm, and full; skin covered with a warm moisture.

5 P.M.—Patient again becoming worse. Left side of face again assuming the peculiar expression of paralysis. Mucus, in large quantity, accumulating in the throat, so as to lead to the apprehension that she would choke to death. Succeeded in dislodging some of it with my finger, but rapidly fills up. Applied ice to her lips, but without the least appreciation of it on her part. She now sank gradually, coma supervening, and death making its appearance at 9 P.M.

This is the first appearance of cerebro-spinal meningitis in this section. Another case (a child of five years of age,) is now convalescing under the same treatment detailed above. I should be pleased, Dr., if you would also give us any new idea regarding the pathology and treatment of this much-dreaded disease, at your earliest convenience.

Very respectfully,

G. A. KUECHEN, M.D.,

Late Surgeon 154*th Ill. Vol. Infantry.*

Annual College Commencement.—The Public Annual Commencement for conferring degrees, in the Chicago Medical College, will be held on the evening of the *first day* of March, next. Prof. Byford will give the valedictory address.

Rush Medical College Commencement.—The Public Annual Commencement in Rush Medical College, of this city, was held in Smith & Nixon's Hall, on the evening of Jan'y 24th, 1866. The President of the Faculty, Prof. D. Brainard, being absent, Prof. J. W. Freer officiated in his place, and, after some remarks in relation to the history of the College and its present prosperity, conferred the degree of Doctor of

Medicine upon ninety candidates for graduation; the *ad eundem* degree upon four; and the honorary degree upon one. The valedictory address was delivered by Prof. J. Adams Allen, in his usual facetious and pleasant style. It was attentively listened to by a large and appreciative audience, and warmly applauded by the class of students in attendance.

London Lancet.—This excellent representative of the English periodical medical literature, reaches us promptly, and is always filled with a large amount and variety of matter of interest and value to every member of the profession.

AMERICAN MEDICAL ASSOCIATION.

The Seventeenth Annual Session will be held in the City of Baltimore, on Tuesday, May 1, 1866.

The following Committees are expected to report:—

On Prize Essays, Dr. Austin Flint, Sr., N.Y., Chairman.

On Quarantine, Dr. Wilson Jewell, Pa., Chairman.

On So-called Spotted Fever, Dr. Jas. J. Levick, Pa., Ch'n.

On Ligature of the Subclavian Artery, Dr. Willard Parker, N.Y., Chairman.

On Tracheotomy in Membranous Croup, Dr. Alex. N. Dougherty, N.J., Chairman.

On Rank of Medical Corps in the Army, Dr. C. S. Tripler, U.S.A., Chairman.

On Rank of Medical Corps in the Navy, Dr. T. L. Smith, N.Y., Chairman.

On Medical Literature, Dr. C. A. Lee, N.Y., Chairman.

On Medical Education, Dr. Samuel D. Gross, Pa., Chairman.

On American Necrology, Dr. C. C. Cox, Md., Chairman.

On Patent Rights and Medical Men, Dr. David Prince, Ill., Chairman.

On Alcohol and its Relations to Man, Dr. Gerard E. Morgan, Md., Chairman.

On Insanity, Dr. Alfred Hitchcock, Mass., Chairman.

On Milk Sickness, Dr. Robert Thompson, Ohio, Chairman.

On the Relation which the Doctrine of the Correlation and Conservation of Forces bears to the Physiological and Pathological Condition of the Human System, Dr. S. L. Loomis, D.C., Chairman.

On the Progress of Medical Science, Dr. Jerome Candee Smith, N.Y., Chairman.

On Diphtheria, Dr. H. D. Holton, Vt., Chairman.

On the Comparative Value of Life in City and Country, Dr. Edw. Jarvis, Mass., Chairman.

On Drainage and Sewerage of Cities in their Influence on Health, Dr. Wilson Jewell, Pa., Chairman.

What Effect has Civilization on the Duration of Human Life, Dr. Augustus A. Gould, Mass., Chairman.

On Disinfectants, Dr. E. M. Hunt, N.J., Chairman

On Compulsory Vaccination, Dr. A. Nelson Bell, N.Y., Ch'n.

On Strangulated Hernia, Dr. W. F. Peck, Iowa, Chairman.

On the Causes and Pathology of Pyæmia, Dr. J. J. Woodward, U.S.A., Chairman.

On the Use of Plaster of Paris in Surgery, Dr. Jas. L. Little, N.Y., Chairman.

On the Etiological and Pathological Relations of Epidemic Erysipelas, Spotted Fever, Diphtheria, and Scarlatina, Dr. N. S. Davis, Ill., Chairman.

On Meteorology, Medical Topography, and Epidemics, Drs. J. C. Weston, Me.; P. A. Stackpole, N.H.: C. L. Allen, Vt.; A. C. Garratt, Mass.; C. W. Parsons, R.I.; B. H. Catlin, Ct.: E. M. Chapman, N.Y.; E. M. Hunt, N.J.; D. Francis Condie, Pa.; T. Antisell, D.C.; O. S. Mahon, Md.; T. M. Logan, Cal.; R. C. Hamill, Ill.; J. W. H. Baker, Iowa; Abm. Sager, Mich.: J. W. Russell, Ohio.

WM. B. ATKINSON,
Permanent Secretary, Philadelphia.

Obituary.—Death of Dr. William B. Herrick.

On the last day of December, 1865, in the Insane Asylum at Augusta, Me., died Dr. William B. Herrick, formerly of this city, The intelligence of this painful termination of an useful and honored life will be received with sadness by many of our older citizens, to whom deceased was well known as the possessor of rare personal and professional qualities, demonstrated during the years of surgical career in Chicago. Dr. Herrick, at the time of his death, was about fifty years of age. He was a native of Lewiston Falls, Me. Receiving a liberal education, he came to Illinois a-quarter of a century ago, and for several years accumulated a practice and reputation in the interior of the State, whence he was called about the year 1845 to fill a chair in Rush Medical College in this city. Few who have been associated with him, in the office of medical instructor, ever exceeded him in the influence he had upon his students by the zealous and high-toned ardor that characterized his quest of science, and his own enthusiasm he was skilled in communicating

to those who in his guidance pursued the paths of learning. At the outbreak of the Mexican war, Dr. Herrick temporary vacated his chair, and entered the service as surgeon of an Illinois regiment. It is volumes to say of the reputation that he received in the field, when it is stated that at the expiration of the term of his voluntary enlistment, the close of the war, the Medical Bureau of the Government with great regret received his declination of the rare compliment of an appointment to the medical staff of the regular army. But Dr. Herrick's heart was with his college, and he came back with his qualities ripened and strengthened to fill an even more distinguished rank in his coveted place among his fellows. Like too many of those who with him escaped the actual presence of death in the terrible campaigns and climate of Mexico, the destroyer followed him home to prey leisurely but surely upon his life. Struggling against the disease with all the appliances of skill, his chronic neuralgia became paralysis, terminating in a softening of the brain, reducing the strong framed and acute minded man to the bodily and mental wreck upon which the office of death seemed less kind because delayed through seven long years of darkness. In the loss of Dr. Herrick, dating from the beginning of the painful eclipse of his faculties, the cause of science in the West lost a noble and zealous votary, and our community a valued and generous citizen.—*Chicago Tribune.*

Copaiba Deprived of its Disagreeable Smell.—Copaiba and pitch, of each one ounce; magnesia, a sufficient quantity to make a mass. According to the greater or less amount of magnesia, the mass will be more or less consistent. If the latter, a teaspoonful may be given two or three times a-day; if the former, pills may be made. M. Beyran, of Paris, has found this preparation not only effectual, but to present none of the usual and very offensive odor of the copaiba.—*London Lancet.*

A Nice Point of Differential Diagnosis.—M. Gilbert lately stated before the Academy of Medicine of Paris that in the diarrhœa premonitary of cholera (miasmatic diarrhœa) the tongue is swollen, pale, moist, white and covered with a layer of mucus; whilst in bilious or inflammatory diarrhœa the tongue is red, dry, small, and sharp-pointed.

Mortality for the Month of January.—Below will be found a table of the mortality of Chicago for the month of January, as taken from the books of the health-officer. The whole

number of deaths is 293, being an increase of 68 over the deaths for the same month of the year previous. The most prevalent disease seems to have been diphtheria, although the report indicates a generally healthy condition of the city. Croup and diphtheria, the diseases most prevalent among children in winter, were the causes of 60 deaths—almost a-fourth of the whole number.

DISEASES.

The following table shows the causes of death and the number of each:—

Accidents,	1	Inflammation of Bowels,	5
Asthma,	3	Inflammation of Lungs,	7
Apoplexy,	2	Inflammation of Stomach,	1
Brain Fever,	3	Lung Fever,	6
Bronchitis,	2	Liver Complaint,	1
Congestion of Lungs,	6	Nervous Fever,	4
Congestion of Brain,	3	Old Age,	11
Colds,	2	Pneumonia,	2
Cancer,	1	Purpura,	1
Consumption,	25	Stillborn,	17
Cramps,	19	Suicide,	2
Croup,	29	Starvation,	1
Convulsions,	5	Scarlet Fever,	6
Childbirth,	7	Small-Pox,	2
Cerebro-Spinal Meningitis,	1	Typhoid Fever,	17
Decline,	4	Teething,	8
Diphtheria,	31	Whooping-Cough,	1
Delirium Tremens,	1	Water on Brain,	5
Dropsy,	11	Fever,	2
Dysentery,	2	Heart Disease,	3
Diarrhœa,	1	Imbecility,	1
Exposure,	1	Intermittent Fever,	1
Erysipelas,	3	Unknown,	20
Found Dead,	2		
Frozen,	1	Total,	293
Inflammation of Brain,	1		

NATIVITIES.

The following table shows the nativity of the deceased:—

Chicago,	163	Germany	37	Scotland,	2
Other States,	43	Isle of Man,	1	Sweden,	2
Bohemia,	2	Ireland,	19	Unknown,	6
Canada,	4	Norway,	6		
England,	6	France,	2	Total	293

Ages of the Deceased.—Under 5 years, 152; over 5 and under 10 years 18; over 10 and under 20, 11; over 20, and under 30, 29; over 30 and under 40, 26; over 40 and under 50, 17; over 50 and under 60, 14; over 60 and under 70, 9; over 70 and under 80, 9; over 90, 1; unknown, 7. Total, 293.

January, 1866.		January, 1865.	
North Division,	74	North Division,	61
South Division,	115	South Division,	82
West Division,	104	West Division,	82
Total,	293	Total,	225

DEATHS DURING THE YEAR.

Below will be found a monthly tabular statement of the deaths in each division of the City, as shown by the official report of the health-officer:—

Month.	S. D.	N. D.	W. D.	Total.
January	82	61	82	225
February	101	61	94	256
March	97	64	118	279
April	100	57	93	250
May	88	48	93	229
June	70	43	84	197
July	130	122	173	425
August	139	127	198	464
September	98	94	154	346
October	125	79	156	360
November	104	75	120	299
December	102	89	142	333
Totals,	1,236	920	1,507	3,663

AGES.

The following is a statement of the ages of the deceased:—

Years.	No.	Years.	No.
Under 5	1,898	From 70 to 80	71
From 5 to 10	215	From 80 to 90	21
From 10 to 20	170	From 90 to 100	3
From 20 to 30	312	Over 100	1
From 30 to 40	379	Stillborn	69
From 40 to 50	178	Unknown	98
From 50 to 60	130		
From 60 to 70	118	Total	3,663

The following is a statement, showing the nativities of the deceased:—

NATIVITIES.

Chicago,	1,997	France,	9	Belgium,	3
Other States,	559	Italy,	6	Russia,	1
Canada,	41	Indian,	1	Colored,	19
England,	68	Germany,	352	At Sea,	2
Ireland,	377	Holland,	4	Unknown,	69
Scotland,	23	Prussia,	2		
Wales,	7	Bohemia,	13	Total,	3,363
Norway,	58	Denmark,	9		
Sweden,	41	Poland,	2		

CAUSES OF DEATH.

The following statement shows the causes tending to produce death in the cases of the above:—

Accidents,	78	Hemorrhage,	5
Apoplexy,	21	Hemorrhage of Bowels,	1
Asthma,	2	Hernia,	1
Bilious Fever,	24	Inanition,	3
Brain Fever,	45	Infanticide,	1
Congestive Fever,	3	Infantile Remittent,	1

Intermittent Fever,	10	Inflammation of Bladder,	1
Lung Fever,	32	Inflammation of Bowels,	76
Nervous Fever,	38	Inflammation of Brain,	35
Puerperal Fever,	12	Inflammation of Chest,	2
Scarlet Fever,	90	Inflammation of Head,	1
Ship Fever,	2	Inflammation of Kidneys,	6
Spotted Fever,	8	Inflammation of Liver,	2
Typhoid Fever,	129	Inflammation of Lungs,	95
Typhus Fever,	11	Inflammation of Stomach,	3
Bronchitis,	1	Influenza	1
Burned,	8	Injuries,	5
Calculus,	1	Intemperance,	9
Cancer,	21	Jaundice,	4
Catarrh,	1	Liver Complaint,	14
Cerebritis,	1	Lockjaw,	3
Cerebro Meningitis,	1	Lung Complaint,	2
Childbirth,	62	Marasmus,	15
Cholera Infantum,	27	Measles,	22
Cholera Morbus,	24	Meningitis,	2
Chronic Diarrhœa	2	Neglect,	1
Colds,	23	Neuraligia,	1
Congestion of Bowels,	6	Old Age,	84
Congestion of Brain,	38	Ovarian Tumor,	1
Congestion of Bronchial Tubes,	1	Paralysis,	16
Congestion of Kidneys,	1	Paralysis of Brain,	1
Congestion of Liver	3	Phthisis,	1
Congestion of Lungs	28	Pleurisy,	1
Congestive Chills,	4	Pneumonia	21
Consumption	313	Poisoned	2
Convulsions,	117	Puerperal Hemorrhage,	1
Cramps,	213	Quinsy,	1
Croup,	258	Rheumatism,	7
Decline,	3	Scalded,	3
Delirium Tremens,	3	Scarlatina,	1
Diabetes,	1	Sciatica,	1
Diarrhœa,	81	Scrofula,	4
Diphtheria,	170	Shot,	3
Disease of Bowels,	1	Small-Pox,	57
Disease of Brain,	3	Sore Throat,	10
Disease of Head,	1	Spasms,	7
Disease of Lungs,	2	Spinal Complaint,	18
Disease of Stomach,	1	Stabbed,	1
Dropsy,	78	Stillborn,	137
Dropsy on Brain,	13	Suffocation,	7
Drowned,	35	Suicide,	13
Dysentery,	83	Summer Complaint,	303
Epilepsy,	2	Sun-stroke,	4
Epileptic Fits,	2	Suppressed Menstruation	1
Erysipelas,	19	Teething,	14
Flux	1	Tumor,	3
Found Dead,	13	Ulcer,	1
Gangrene,	1	Ulceration of Bowels,	1
Gastritis,	1	Water on Brain,	28
General Debility,	2	Whooping-Cough,	15
Gravel,	1	Worms,	3
Green Canker,	1	Unknown,	234
Hair-lip,	1		
Heart Disease,	38	Total,	3,663

DEATHS IN FORMER YEARS.

The following statement gives the number of deaths which have taken place in the City annually for the past 19 years:—

1847	520	1858	2,049
1848	560	1859	1,826
1849	1,578	1860	2,056
1850	1,335	1861	2,069
1851	844	1862	2,575
1852	1,648	1863	3,522
1853	1,203	1864	4,033
1854	3,830	1865	3,633
1855	1,983		
1856	1,893	Total in 19 years,	39,294
1857	2,167		

Another Victim of the Risks connected with the Medical Profession.—M. Bauchet, an extremely promising hospital surgeon, and assistant professor at the Faculty of Paris, has just died from the effects of a morbid poison, which gained access to the economy by an insignificant scratch on the finger, to which the deceased had paid no attention. He was well known as an indefatigable worker in the field of science, and died universally regretted. M. Bauchet was especially regarded and esteemed by M. Velpeau, and this veteran surgeon, deeply moved, paid at the funeral a warm tribute to his departed young friend.—*London Lancet.*

Vaccination and Syphilis.—This highly important subject has been fully treated by the *Siglo Medico*, a Spanish medical paper. In this article we find statistical tables of some value. The author, in collecting data respecting the instances of syphilitic contamination through the vaccine virus, has been led to draw up a table which show that the disease was communicated 224 times out of 314 vaccinations. It should be noticed that the 93 negative cases were such as evidently *might* have conveyed the complaint.

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THE

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N. S. DAVIS, M.D., Editor.

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ARTICLE IX.

PRACTICAL REMARKS ON BLOOD-LETTING.

By D. B. TRIMBLE, M.D., of Chicago, Ill.

As certain medicines have, at one period, obtained great celebrity in the cure of diseases, and, after a time, have been treated with partial or total neglect, either justly or without cause; so has it been with blood-letting, to a certain, and probably to an unjust, extent. That, in the hands of the profession, a generation or two past, it was used to an injudicious and injurious degree, there can be but little doubt; but the danger of falling into the opposite extreme, and neglecting a remedy so potent, and oftentimes so beneficial, is, I think, imminent. Therefore, as one of the most powerful means we possess of controlling disease, blood-letting should maintain a prominent place in the list of remedies at the disposal of the physician for the amelioration or cure of "the ills that flesh is heir to." That it is too much neglected by the younger members of the profession, at least, of the present day, I think there is no doubt; and it has not been long since one of them, of considerable practice in this community, (and of which he is well deserving,) told me that he had not only never bled any one, but that he had never seen any one bled! With this impression, and with the hope of directing this portion of the profession to its

claims upon their attention, I have collected and condensed, from numerous sources, the views and experience of authors and practitioners respecting its employment in the various diseases in which it has been used, and have, also, occasionally given my own.

Some general circumstances should be taken into consideration in enabling us to determine the propriety of blood-letting. If the constitution is vigorous and tending to plethora, it will, of course, bear it much better than if feeble or anæmic. Age, also, should be considered; youth, or middle life, bearing it better than either of the extremes of infancy or senility. It is better borne by the sanguine than by the nervous or phlegmatic temperaments; by a person of temperate, than by one of intemperate habits. Climate and seasons should also influence, as it can be more freely resorted to in cold climates and seasons than in the warm. In the early stages of disease, as a general rule, it is more beneficial than in the later. In all that class of diseases in which the circulation is mainly affected, it is especially beneficial: as in plethoras; vascular irritations; inflammations; fevers; congestions, or sanguineous determinations; hemorrhages; or morbidly increased secretions or effusions.

In this paper, I shall briefly consider those diseases of the *nervous system* in which blood-letting is recommended.

In all accidental injuries of the brain or spinal marrow, blood-letting is frequently beneficial. In fracture of the cranium, concussion or compression of the brain, and hernia cerebri, venesection is required in many cases; and in all, except the last, arteriotomy may be necessary. In all of them, and in fractures or wounds of the vertebræ, local bleeding is beneficial, and venesection is sometimes required in the injuries of the spine and spinal marrow.

In *fracture* of the *cranium*, unaccompanied by depression of the bone, or by inflammatory symptoms, bleeding may sometimes be dispensed with; but, where these conditions make it necessary, the temporal artery should be opened, or a free bleeding from the arm resorted to.

Concussion.—In the first stage, or that of depression, bleed-

ing should be avoided; but when reaction takes place, then bleeding freely from the temporal artery or arm is requisite, one or two bleedings will generally suffice, and, if necessary, local bleeding may follow.

In *fracture*, or in *concussion* of the *spine*, where inflammation supervenes, leeches or cups should be applied along its track.

In all the phlegmasiæ of the brain, spinal marrow, and nerves, viz.:—in meningitis; cerebritis; tuberculous meningitis; cerebro-spinal meningitis (acute or epidemic); spinal meningitis; myelitis; or neuritis, both general and local bleeding are mostly indicated. In acute meningitis only, however, is arteriotomy proper; and, in this disease, when caused by hypertrophy of the left ventricle of the heart, bleeding should be more cautiously practised. In all these affections, general bleeding should be used the first few days, or until the severity of the symptoms abate, when cups or leeches may be substituted, until depletion is no more required. In all these affections, except cerebritis, we must be chiefly guided by the condition of the pulse, to determine the amount of blood to be taken: when the pulse becomes softer and slower, the bleeding to be checked, to be renewed when the exacerbation returns. But in *cerebritis*, the pulse is often, if not generally, small and corded, and the effect upon the brain, and system generally, must chiefly guide us as to the quantity drawn. If the pulse, when small and corded, rises under the operation, and becomes fuller and softer, it will, probably, be well borne. Frequently in this disease, and always in *tuberculous meningitis*, it is only in the *early stages* that venesection should be practised; to be followed, if requisite, by the frequent but moderate application of cups or leeches. In acute cerebro-spinal meningitis, it is equally called for; and even in the epidemic variety, or that improperly termed "spotted fever," it has been recommended by some authors; and I cannot but be impressed with the propriety of resorting to it in many of the cases that occur, judging by the symptoms related by those who have reported cases. It is true that I can give no experience regarding the treatment of this formidable malady, as it has never been my fortune, or misfor-

tune, to see a case; yet, it is my belief, notwithstanding the strong terms in which it has been denounced by some authorities, that this powerful agent is too much neglected, or too inefficiently used. When we take into consideration the symptoms—the disease being often ushered in with a chill; followed by severe headache; pains in the neck, spine, limbs; sensitiveness to light and sound; flushed, or turgid countenance; cramps, or spasm of muscles; opisthotonos; hot skin; great thirst; active febrile excitement; pulse, though sometimes depressed, often full and frequent; delirium; stupor; convulsions; coma; the temptation to me would be very strong to use the lancet, notwithstanding the symptoms of debility that eventually, and often speedily, supervene. It is true that, in many cases (as reported,) these symptoms, or the majority of them, do not occur, but a state of extreme debility or collapse prevails from the first; in such cases, depletion would certainly be improper. Only in the earliest stages of those with active inflammatory symptoms, probably, would bleeding be admissable, but the congested, and probably inflamed, condition of the brain and spinal marrow, strongly indicate its use in this stage. The rapid and overpowering influence of the disease, probably, soon induces the low or asthenic condition that supervenes, and if the inflammatory condition could be relieved, this result might not take place. I think these views may receive some support from a number of cases reported by Dr. C. G. Page, in the Examiner for October, 1865. He reports 19 cases, of which 3 recovered, and 16 died. They were all cases of males, generally in the full vigor of youth, "strong and healthy," and, in most of them, the symptoms before enumerated were present. In several of them the treatment is not mentioned, but in those where it was related, leeching was practised but once, and that with partial relief, and venesection not at all, and the natural inference is, that it was not practised in any case. As in cerebritis, innervation is often so overpowered by the condition of the brain as to depress the circulation, thereby causing a contracted, if not feeble, condition of the pulse, and, sometimes, coolness of the extremities, it is fair to infer that a violent

attaek of cerebro-spinal meningitis may cause similar phenomena; and if in cerebritis the pulse often becomes fuller, or even firmer, after or during the abstraction of blood, so might, probably, a similar effect be produced by the same means in this affection. I present these views with diffidence, as they are not the result of experience. I know that most authorities regard this as essentially a blood disease; that there is a septic condition of the blood, with local inflammation of the base of the brain; or, that there is a dyscrasia in which the serum is rapidly separated from the crassamentum of the blood, producing serous apoplexy, or convulsions, or asphyxia, etc., according to the part of the body in which the infiltration takes place. All modes of treatment appear to have about equally succeeded (or failed,) and, therefore, basing my treatment upon the semeiology, I should be inclined to practice depletion in the early stages of those cases exhibiting active inflammatory symptoms, speedily following it with stimulants and tonics.

In neuritis, venesection, if the pulse is full and strong, and leeching along the course of the inflamed nerve is recommended.

In the *organic affections* of the brain and nervous system, bleeding has a beneficial influence. In hypertrophy, atrophy, or tumors of the brain, or spinal marrow, both general and local blooding is sometimes called for; in abscesses of the brain, local bleeding only. In all this class of cases, venesection, when requisite, should be used with much more caution than in the preceding class; and in most cases, probably in all those of atrophy, as well as abscesses, should be confined to local bleeding. In the cerebral diseases, leeching or cupping the temples or nucha; and in the spine, over the affected part, would be the indications.

In sanguineous determinations, or congestion of brain or spinal marrow, bleeding, in some form, is very often required. In this class may be mentioned apoplexy; epilepsy; vascular, or passive congestion of brain; delirium ebrietatis; convulsions, and coma.

In *apoplexy*, general bleeding is usually indicated. In very urgent cases, arteriotomy may be preferable, but generally ven-

esection is sufficient. Though bleeding is generally requisite in apoplexy, it should not be indiscriminately practised, but the age and constitution of the patient, his general habits and health, and the causes producing the attack, should all be taken into consideration. Yet, I do not agree with some authorities, that we should be guided by the condition of the pulse alone, or always, in deciding upon the propriety of blood-letting. If the pulse is full and strong, authors advise bleeding, "but if small and feeble, there is no advantage to be derived from the further loss of blood at the commencement of the treatment." So says that eminent (and generally excellent and reliable) authority, Dr. Wood, in his work on *Practice*, vol. ii., pp. 68, 69. But, as the attack is caused by hemorrhage or congestion, and the symptoms from either cause are generally undistinguishable, how are we to decide whether the compression from congestion does not still exist, thus, in a great measure overpowering innervation, and lessening the heart's action, and, consequently, the pulsation of the arteries? This is the view I took of a case some years ago, and I think the result justified it:—

One Sunday morning, about 10 o'clock, I was hurriedly summoned to one of my patients, a large-framed lady, of full habit, and upwards of 60 years old, several of whose family had died of apoplexy. Just as she was about to enter a place of worship, she fell, and was insensible. She was carried into a neighboring house, and, when I arrived, I found her sister, three physicians, and a number of her friends surrounding her. She was reclining on a sofa, with her feet in a hot mustard bath, and cold applications to the head. Her face (usually very florid) was pallid, but swollen; foam passing from her lips; her pulse *barely perceptible*. Her sister (a lady of great intelligence) earnestly besought me to do something for her relief; the other gentlemen probably fearing to advise blood-letting in the aspect of the case. I saw that death must speedily ensue if she was not relieved, and believing that hemorrhage might not yet have taken place, and that innervation was depressed by the congestion and compression of the brain, I laid my views before the three medical gentlemen, and received their full

approbation to resort to venesection; and, with the concurrence of the sister, to whom I explained, in few words, the case and its possible unfavorable result, I opened a vein in the arm, with one of the physicians with his fingers on one wrist, while I did the same with the pulse of the other. In a short time, there was an increase in the frequency and fulness of the pulse, and I then opened a vein in the other arm, and after the abstraction of probably twenty ounces of blood, and considerable reaction of the system, as shown by the improved condition of the pulse, the increased warmth of the skin, less dysp-nœa, decreased stertor, etc., I had strong hopes of the recovery of my patient. In the evening she spoke, but not rationally; the next day she would answer questions, but in a confused manner until the evening, when she aroused to full consciousness,and four days from her attack was taken home, when she recovered her usual health. Two years before, she had had symptoms of an attack, which I warded off chiefly by a full bleeding. About two years after the second attack, and after my removal from the place, she died from the same disease. Now, if we had been guided by the pulse alone, as advised by Dr. WOOD, who says, (p. 669,) "I would *repeat*, that the practitioner should be guided by the *strength* of the pulse, whether he shall bleed or not," and *not* have bled this patient, death must have inevitably and speedily occurred; and I think that the prompt and perfect relief given shows that the theory of depressed innervation from congestion, was, in this case at least, correct. On the other hand, I have had cases where the pulse was full and strong, the face red and turgid, and all the indications where bleeding is recommended, and who have, nevertheless, succumbed to the disease, notwithstanding free depletion; so that the pulse cannot always be taken as the guide for this practice.

In *epilepsy*, bleeding should be more cautiously used than in apoplexy, and should depend more upon the etiology than in the former disease. If preceded by meningitis, cerebritis, or cerebral congestion; or from injuries to the cranium, causing compression of the brain; or by a rich or plethoric condition of

the blood, especially if threatening apoplexy, venesection should be practised during the paroxysm; and if coma remains after the convulsive efforts cease, a repetition of the bleeding, or leeches or cups to the nucha or temples. The majority of cases, especially those of long standing, do not require it, and in many it would do much injury. Perhaps it would not be irrelevant here to remark that, in my early practice, I had an interesting case of epilepsy, the only *apparent* cause for which was thwarted affection. It was in a young lady, about 20 years old, of full medium height, and robust form and health. Her paroxysms were very violent, and bleeding and other remedies did not cure, though they ameliorated the severity of her disease. They did not recur very often, but were increasing in frequency. She was engaged to a young man, who was employed as supercargo in a vessel that sailed between our ports and the East; and, chiefly, on account of his seafaring life, her mother strenuously opposed her marriage. Connecting the period of the first appearance of the disease with that of her disappointment, and being unable to trace the cause to anything but the restraint she was imposing, from a sense of duty, on her strong will and desires, I thought it might possibly be that if this pressure (which *bleeding* could not remove) was taken off her brain and *heart*, she might probably recover; and, sympathizing with her in her trouble, I felt justified in stating to her mother, with considerable force and urgency, that I believed her daughter's convulsions were caused by the state of her feelings, and *her* opposition to her earnest and unsubdued affection. She was thus induced to reluctantly, to withdraw her opposition, and I was gratified, find that for three or four years (after that time I lost sight of them) subsequent to her marriage she had no return of them, and that she was blessed with a healthy child and a good husband. In her case, I have no doubt that the relief to her mental depression, and the consummation of her marriage, effected the cure; yet, taking her sanguine temperament, her tendency to plethora, and the severity of the convulsions into consideration, they might have proved fatal, had she not have been relieved by bleeding.

In *active* or *vascular congestion* of the brain, though not amounting to apoplexy, bleeding is generally required. If not subdued by venesection, then cupping or leeching the temples or nucha should be practised.

In *passive congestion*, or that caused by mechanical means, it is seldom requisite; where it is, local bleeding is generally sufficient.

Delirium ebrietatis is another disease in which the loss of blood may relieve unpleasant symptoms. I do not mean that condition of the system brought on in the habitually intemperate by abstaining from their accustomed stimuli, but the state caused by the stimulation of alcoholic liquors, in those not in the *habit* of intemperate drinking. In persons of a full habit, or sanguine temperament, an approach to congestion of the brain, or to meningitis, is sometimes produced by the too free use of liquors, when it becomes necessary to bleed.

In *delirium tremens*, it is, probably, never requisite; though there is sometimes a congested condition of the brain preceding the *tremors*, in which local depletion is required.

Coma, though but a symptom, or the effect of disease, may, from its importance, be treated of in this connection. If produced by congestion, or inflammation of the brain or its meninges, or by mechanical pressure, venesection, leeching, or cupping would be appropriate; but if from an anæmic state of the system, or from the prostration of fevers or narcotic poisons, it would be injurious. If the pulse is feeble, the skin cool, and the pupils dilated, bleeding can seldom or never be proper.

In the *convulsions* of children, connected with a full and frequent pulse, a flushed and swollen countenance, and hot skin, bleeding, either general or local, will frequently be required in the paroxysm; and if coma remains long after the paroxysm ceases, it may be repeated during the intermission. But a large number of cases will do well without it.

In *puerperal convulsions*, which are *generally* nearly allied to apoplexy, prompt and efficient venesection is called for, and, in some cases, even arteriotomy may be resorted to. Not only does bleeding unload the congested brain, by lessening the

quantity of blood in the body, but, in cases where delivery has not been accomplished, (and this is usually the case,) by its relaxing effect on the system, it causes the os uteri to dilate, and thus facilitates delivery. The pressure on the nervous system and on the circulation being thus removed, the chief cause of the convulsions ceases.

To the *functional* diseases of the brain and nervous system it is less applicable than to any of the classes mentioned, and in most of them may be dispensed with; and, when necessary, local bleeding is generally sufficient. In catalepsy, hysteria, nervous irritation, and cephalalgia venesection may be required occasionally, and with ecstacy, stupor, or vertigo may, more frequently, be treated by local bleeding.

Catalepsy.—In this rare disease, the pulse must guide us: if full and tense, venesection may be practised moderately, and cups or leeches applied to the temples or back of the neck.

In *hysterical convulsions*, where the pulse is full and strong, and the face flushed and turgid, blood may be taken from the arm. The causes of hysteria must, in a great degree, guide our treatment; but where there are local determinations of blood to any part, or where there is tenderness and irritation of the spine, local bleeding is often very beneficial.

In *nervous irritation*, when connected with a congested condition of any part of the nervous system, moderate *general* bleeding, or local bleeding may be advised; but it should be with great care, as the majority of cases do not call for it, and in many it would be very injurious.

Though *cephalalgia*, like coma, is only a symptom of disease, and not the pathological condition itself, yet is of so frequent occurrence as to be a subject of interest, and its treatment of much importance. Though no doubt always symptomatic, yet there are cases, the etiology of which cannot be decided, and they are therefore termed idiopathic, for want of a better knowledge of the disease. In cases where there is determination of blood to the brain, or where the pulse is full, tense, or frequent, the head or skin hot, the eyes congested, or a secretion of tears, bleeding, both local and general, may be required, and will

often speedily relieve. Even in anæmic cases, there may be a congested condition of the brain from the impaired vigor of circulation; and I have known great relief obtained, in such cases, by the application of a few leeches to the temples. It is probable that in persons predisposed to plethora, a congested condition of the portal circulation is often the cause of severe headache, and that a free evacuation of dark, almost grumous, bile will relieve it. This I have a few times experienced in my own person, and I cannot account for the relief obtained, except on this supposition. In headache from this cause, bleeding may sometimes be necessary.

In ecstacy, stupor, or vertigo, local bleeding may often relieve the symptoms and prevent the accession of more serious diseases, of which they are generally the forerunners.

In some of those diseases of the nervous system, where one of the chief symptoms is deranged motion, bleeding, general and local, is sometimes necessary; especially in chorea, paralysis, and tetanus.

In the cases of *chorea* that have come under my care, I have never found it requisite to bleed, either generally or locally; and as it generally occurs in the young and feeble, and is often connected with an anæmic condition of the system, it will seldom be necessary, indeed, will generally be injurious to deplete. But there are cases in which local, and occasionally general, bleeding may have a beneficial effect; as, for instance, where there is a tendency to congestion of the brain, as indicated by a full and tense pulse, severe headache, and flushed features, leeches to the temples or moderate venesection should be resorted to; or if there is tendernets of the spine, cups or leeches should be applied to the affected part.

In *paralysis*, if caused by meningitis, cerebritis, apoplexy, congestion of brain, spinal meningitis, or myelitis, venesection, or local depletion, or both, are generally necessary in the early stages of the disease, but inapplicable at later periods, or when it has taken on the chronic form.

In *tetanus*, where there are symptoms of cerebral or spinal inflammation, as shown by fever, full and frequent pulse, head-

ache, tenderness of spine, and numbness of lower extremities, venesection and cupping over the spinal column should be practised; yet, many, perhaps most, cases of locked-jaw are produced by other causes, as punctured wounds, etc., in which there is no inflammatory condition of the nervous centres, and in which it is not required.

In *hydrophobia*, bleeding has, in some cases, been practised to, and with a view to, a fatal effect; but as to any *other* result, in respect to arresting or retarding the disease, we have not, that I am aware of, any reliable evidence. In regard to the moral or legal *right* that physicians have, to pursue such a practice, I think there can be no question. Their province is to *cure*, not to *kill*, and if they cannot effect the one result, they have no right to perpetrate the other. As well might we terminate the sufferings, by death, of our patients in any other terrible and generally hopeless disease, as in this.

There is but one other class of diseases of the nervous system to be treated of in this connection, and that is, those of deranged intellection.

In *insanity*, which comprises in its meaning the whole series of deranged intellect, general and local depletion is often called for; though, on this subject, authorities of great weight differ. In all cases of mania produced by cerebral inflammation, both theory and facts warrant us in employing venesection and local bleeding, promptly and freely. If caused by chronic phrenitis, or the puerperal state, more caution should be observed in the use of this measure, but it should not be neglected. If, however, it is to benefit the patient, it should be resorted to in the early stages of his disease; and though it may be serviceable even after insanity has been long confirmed, it is but seldom requisite. If in cases of insanity that have been a month or two under treatment there is not a marked amendment of the symptoms, the best practice the private physician can resort to, is to send his patient to a good asylum for the insane. This has been my rule, and I have not regretted it; for though one or two are yet lingering in hospitals, that were sent there fifteen years ago, by my advice, yet others have been released—some

partially, some wholly, cured; and in all cases, they have been more comfortable and better treated, professionally, than it would be possible for them to be at home, and by private practice.

I have thus given a sketch of the diseases of the nervous system in which this potent agent should, or may be used; and I scarcely need remark, that there are so many circumstances attending each individual case of disease, beside its *name*, to influence the decision of the practitioner in the treatment of his patients, that it is difficult to make any rule universally applicable, and on his knowledge and judgment must he alone depend at the bedside of the sick. Yet, the young and inexperienced physician may often be relieved of anxious and perplexing doubts, if he can avail himself of the opinions or experience of others; and, with this object in view, I have crudely and briefly treated of a portion of those diseases that may be benefited or relieved by this one of the agencies we possess, and which, if *properly* employed, is scarcely excelled in importance by any other. The subject will be resumed.

Chicago, February, 1866.

ARTICLE X.

SURGICAL CASES.

By GEO. K. AMERMAN, Attending Surgeon to the Chicago City Hospital.

CASE I. *Strangulated Femoral Hernia—Operation—Recovery.*

Miss G., aged 25, was attacked on Thursday, March 16th, with pain in the lower part of the abdomen, nausea, and vomiting. In the evening she took a dose of senna, prescribed by a friend, after which the pain and vomiting increased, so that, on Friday evening, Dr. HURLBUT, the family physician, was called. He at once recognized the true state of the case, and made a careful but ineffectual effort to reduce the tumor. The pain and vomiting continuing, I was invited by Dr. H. to see the patient, with a view of operating if the taxis failed after another patient

trial. At this time, the case presented all the usual phenomena of a strangulated femoral hernia. The tumor was not large, but firm and closely constricted. Dr. H. administered chloroform to complete anæsthesia, and we made an unsuccessful effort at reduction. A large dose of opium was ordered for the night, and the operation determined upon early the next morning.

Saturday, March 18.—No change in the character of the tumor or symptoms since yesterday. Vomiting and pain continue; bowels constipated from the first; pulse 96. Decided to operate, and, with the assistance of Dr. BOGUE, proceeded in the usual way to expose the sac. It was found unusually distended with dark-colored serum, and adhering to its walls everywhere, a loop of intestine perfectly black but glistening and firm. The stricture was divided, and the intestine left lying in the sac. A couple of sutures in the upper part of the wound, the remainder left open, with simple cold water dressings, completed the operation.

The opium treatment was adopted, and, after a very protracted convalescence, contrary to our expectations, the patient fully recovered, still being the subject of a small-sized reducible femoral hernia necessitating the constant use of a truss.

CASE II. *Strangulated Femoral Hernia—Operation—Death on the fourth day.*

Mrs. G., aged 66, for 26 years the subject of a large, irreducible femoral hernia, was taken on Thursday, May 18th, with vomiting, diarrhœa, and pain in the bowels. As such attacks were of common occurrence, her friends resorted to simple domestic means, and on Friday morning the vomiting and diarrhœa ceased, but the pain and tenderness continued.

On Friday evening, Dr. HURLBUT, the family physician, was called. He at once recognized the difficulty, and made an unsuccessful effort at reduction. On Saturday evening, I was invited by Dr. H. to see the case. She then had all the usual symptoms of strangulated hernia. The tumor was large, hard, painful, and dull on percussion. Pulse 100 and feeble.

It was decided to administer an anæsthetic, try taxis, and, if

unsuccessful, operate. Dr. H. administered chloroform to complete anæsthesia, and, after a patient trial to reduce, without the slightest effect, an incision was made through the external parts, the sac opened, and a large mass of omentum exposed. It presented a perfectly natural appearance, except, perhaps, rather more injection and less glistening. The stricture was divided and about two-thirds of the mass returned, the remainder left lying in the sac. A few sutures and simple dressings to the wound completed the operation.

The opium treatment was adopted, and everything progressed favorably until the morning of the fourth day, when she began to be delirious and show signs of prostration. Brandy, beef-tea, and quinine were given during the day, but she sank rapidly and died in the evening.

Remarks.—There are one or two interesting features connected with the above cases, which may be noted and made useful in future cases of a similar character. In Case I., strangulation occurred on Thursday, March 16th, and on Saturday, March 18th, at the time of the operation, the intestine was apparently gangrenous, though not softened; whilst in Case II., at the time of the operation, (the same time having elapsed after the occurrence of the strangulation as in Case I.,) the omentum was found almost perfectly natural. The symptoms before the operation were as urgent in the one as in the other, and, indeed, if external circumstances were any guide, we should have inferred a much more favorable condition of the parts in the first case than in the second. The age of the patient, the length of time the hernia had existed, and the size of the tumor were all favorable in Case I., and, hence, we believe, that in all cases of strangulated hernia, the operation should be performed early, without any regard to the apparent urgency of the symptoms. As soon as one careful, fair, and patient effort to reduce fails, where all the surroundings are favorable, the chances are that nothing short of an operation will save your patient, and the sooner that is resorted to the better are the chances of a successful result.

Secondly. The apparent condition of the hernial contents

cannot always be relied on in forming a prognosis. In Case I. the intestine was found quite black and, to all appearances, almost certain to slough, and yet the patient made a good recovery; whilst in Case II., although the omentum presented a perfectly natural appearance, death followed on the fourth day. The age of the patient, the length of time the hernia has existed, and the size of the tumor are all to be taken into the account, and, along with the condition of the contents of the sac, will enable us to form a reasonable prognosis in nearly every case.

ARTICLE XI.

MORTUARY STATISTICS OF NATCHEZ, MISS., FOR THE YEAR ENDING DECEMBER 31st, 1865.

Compiled By J. STEBBINS KING, M.D., Surgeon in charge Mississippi State Hospital, Natchez, Miss.; late Recorder Board of Health.

Editor Medical Examiner:—

I herewith transmit, for publication, a consolidated report of deaths occurring in this city, for the year 1865. It is compiled from the records of the Board of Health, and the City Sexton's books.

The Board of Health was organized by order of Gen. Davidson, in the latter part of last January, and continued to keep the mortuary records until the 14th of September, when the City Sexton resumed his duties under civil rule.

The number of deaths from unknown causes appears large, for two reasons:—First, there was no complete record of diseases kept during the month of January; Second, the physicians of this city, as elsewhere, are not as particular as they should be, in regard to reporting the causes of death to the City Sexton.

I am now compiling the mortuary statistics of this city from the year 1850 to date, which, when completed, I will forward to you. I am also collating, as rapidly as possible, the mortuary statistics of all the principal cities and towns throughout

the United States. And I would hereby request physicians to assist me, as far as possible, by forwarding me the mortuary reports of their several cities and towns, together with such topographical and meteorological accounts as may be of interest to the medical profession. As far as possible, I wish the reports to include the sixteen years from 1850 to 1865, inclusive. But where the mortuary reports are not complete for that length of time, forward such as are:—

	WHITE.		COLORED.	
	Male.	Female.	Male.	Female.
Apoplexy,	2	1	2	1
Abortion,	0	0	0	1
Angina Maligna,	0	0	0	1
Bronchitis,	1	0	0	0
Burned,	0	0	0	1
Birth, Premature,	0	0	0	1
Consumption,	6	7	3	5
Convulsions,	2	1	1	4
Congestion of Brain,	1	3	0	0
Cholera Infantum,	1	3	4	0
Colic,	0	0	3	1
Cancer of the Womb,	0	0	0	1
Croup,	0	0	1	2
Diarrhœa, Acute,	5	1	13	14
Diarrhœa, Chronic,	3	1	1	1
Dysentery, Acute,	1	2	2	8
Dropsy,	1	2	2	4
Dentition,	2	0	4	2
Drowned,	1	0	1	0
Debility,	2	0	0	1
Delirium Tremens,	1	0	0	0
Diphtheria,	2	0	0	0
Endocarditis,	2	0	0	0
Fever, Typhoid,	2	1	2	4
" Remittent,	1	2	4	6
" Congestive,	2	1	0	1
" Puerperal,	0	1	0	0
" Scarlet,	0	1	0	0
Gunshot Wound, (accidental)	1	0	0	0

Hydrocephalus,	0	0	0	1
Injury from a Fall,	0	0	1	0
" of Spine,	0	0	1	0
Inflammation of Brain,	2	0	0	2
" Bowels,	0	1	2	1
" Heart,	0	2	0	1
" Liver,	0	1	0	0
" Womb,	0	0	0	1
Killed by Accident,	0	1	1	0
Mortification,	1	0	0	0
Measles,	3	2	2	3
Old Age,	0	1	1	1
Pneumonia,	5	1	13	4
Paralysis,	1	1	0	1
Rheumatism, Chronic,	1	0	0	0
Stillborn,	7	1	9	2
Small-Pox,	0	1	0	1
Tetanus, Traumatic,	1	0	1	1
Tabes Mesenterica,	0	0	1	0
Uterine Phlebitis,	0	1	0	0
Uræmia,	0	0	0	1
Unknown,	15	12	23	29
Whooping-Cough,	0	1	0	0
White Swelling,	0	0	1	0
Total,	75	53	99	108

Total of Whites, 128
Total of Negroes, 207

Of the 90 whites who died previous to the 31st of July, only 20 were of families of old residents; the remaining 70 being almost entirely refugees, who came here from the swamps of Louisiana, many of them dying within 48 hours after their arrival in the city.

The deaths for the several months were as follows: January, 27; February, 30; March, 26; April, 24; May, 52; June, 44; July, 34; August, 23; September, 18; October, 25; November, 17; December, 15.

The ages were —

Under 3 years,	118
Between 3 and 10,	43
" 10 and 25,	43

" 25 and 40,	51
" 40 and 60,	29
" 60 and 80,	21
" 85,	1
Unknown,	29

The population of Natchez, as per census taken last spring, by the Board of Health, was:—

Whites,	3,558
Negroes,	5,026
Total,	8,574

Since that time, the white population has been considerably increased, and is probably at the present time not far from 5000; the colored population about the same. Thus Natchez now numbers about 10,000 inhabitants.

Estimating the average white population for the year to have been 4000, we would have a mortality of one to every 31⅛. And if we were permitted to deduct the 70 deaths of refugees, (who, properly, should not be added to our mortuary list, as, perhaps, without an exception, the diseases of which they died were contracted before arriving in the city,) we would have only one death to every 60 10-29 of the white population.

Estimating the average number of colored inhabitants for the year to have been 5000, we would have a mortality of one to every 24 32-207 of the colored population.

ARTICLE XII.

REPORT ON THE PREVALENCE OF DISEASES, &c., DURING THE MONTH OF DECEMBER, 1865.—BRONCHO-PNEUMONIA COMPLICATED WITH DIARRHŒA.—CEREBRO-SPINAL MENINGITIS.

Read to the Chicago Medical Society by N. S. DAVIS, M.D., &c.

During the first twelve days of December, the weather was dry, mild, and pleasant, with winds chiefly from the north and west. Then came a severe snow-storm, immediately followed

by seven or eight days of intense cold weather. About the 20th, the wind changed to the south, and it commenced thawing. It then continued warm and wet, the atmosphere being filled with mist and dampness, and the roads wet, until the evening of the 27th, when it again became freezing-cold, and remained moderately cold, clear, and dry until the end of the month.

Nothing unusual was noticed in regard to the prevalence of diseases during the first half of the month. Immediately following the extreme cold week that ended about the 20th of the month, catarrhal affections, consisting of slight inflammation of the mucous membrane of the nasal passages, fauces, and sometimes bronchial tubes, accompanied by rheumatic pains or general muscular soreness, became almost universally prevalent. Coincidently with these simple catarrhal affections, there occurred an unusual number of cases of pneumonia and broncho-pneumonia of a very persistent character, and, in a large proportion of the cases, coupled with typhoid looseness of the bowels. The cases of broncho-pneumonia were much more frequent among children than adults, especially children under five years of age. It also prevailed most in the same parts of the city that presented the greatest prevalence of diphtheria and typhoid fever during the two preceding months. Many of the cases commenced with the ordinary symptoms of simple bronchitis, namely, frequent and harsh cough; soreness in the chest; slight general febrile action, generally increased at night; from two to four intestinal evacuations daily, usually thin, green, and sometimes mucous; with coarse mucous rhonchus all over the chest. After five or six days, the respirations would become much more short and frequent; the tongue and mouth more dry; the skin more hot and dry; the pulse more sharp and frequent; the cough shorter and more distressing; the child often giving a moan or grunt with each expiration; the mind dull and sometimes drowsy; the bowels more loose; the urine often scanty and turbid; and the chest, both anteriorly and posteriorly, at the lower part giving a well-marked sub-crepitat râle, and some dulness on percussion. These symptoms generally persisted from one to two weeks, giving the patient, during the

latter part of the time, a strongly-marked typhoid aspect, and then slowly declined, though many cases among the poorer classes of the people terminated fatally. In the cases of recovery, the convalescing stage was protracted and tedious.

During the same part of the month, there came under my observation four cases of cerebro-spinal meningitis, all in young persons; and an unusual number of cases of neuralgia, chiefly in the nerves of the face and neck.

During the last of the extreme cold days preceding the 20th of the month, I was consulted in regard to several cases of dizziness and a feeling of numbness in the head, in two instances amounting to temporary unconsciousness. All these cases were in persons who had been directly exposed to the cold, though, in some instances, very briefly. One, a female, past the middle period of life, had gone only one or two blocks, to a grocery store, and on her return fell unconscious in the street, from whence she was carried to her house, and in a short time recovered, though there remained a sense of confusion in the head when assuming an erect position for several days. No febrile reaction occurred in these cases. For several successive winters I have noticed similar disturbances in the functions of the brain in connection with extreme cold weather, especially in old people; and a simultaneous increase in the number of cases of convulsions and cerebral irritations in young children.

On the 27th of the month, the weather again became clear, dry, and moderately cold, and remained so until the end of the month, with a noticeable diminution of the catarrhal and pneumonic cases. The gross mortality for the month of December, as reported by the Health Officer, was 333; and for the whole year 1865, 3633; which, in a population of 180,000, would be equal to one death for every 49 inhabitants.

It should have been mentioned, that about the middle of the month of December, the water supplied for domestic use throughout the city, by the hydraulic works, became greatly impregnated with small fish, large numbers of which died in the water pipes, and, until past the middle of the succeeding month, kept the water so impregnated with the decaying fish as to ren-

der its taste and smell decidedly offensive. This was the only deviation from the usual local sanitary conditions of the city. Whether the use of such water had any influence in producing the persistent typhoid character presented by the principal diseases prevalent during that period, and in developing the few attacks of cerebro-spinal meningitis and erysipelas that occurred during the last part of the month, we leave each member of the Society to judge for himself.

All of which is respectfully submitted.

Selections.

CLINICAL LECTURE ON THE STUDY OF CHILDREN'S DISEASES.

Given in the Hospital for Sick Children. By CHARLES WEST, M.D., Physician to the Hospital.

GENTLEMEN:—A very wise and good man, to whom I owe much of whatever I have learned of my profession (Dr. Latham) makes, somewhere, the remark, that he was struck at the outset of his career with how, in a large hospital, knowledge was continually running to waste for the want of some one to gather it. He says, too, that this which struck him then, struck him even more forcibly in after years; the old experience, in short, "*Ars longa, vita brevis*," which is realized more and more as the shadows lengthen and the day goes down.

I feel it specially with reference to this hospital, because here, or in inquiries such as its wards suggest, my time, and thoughts, and energies have been engaged for the past twenty-five years, and I rejoice to see you here to-day, gentlemen, because in some of you I trust that I may find fellow-laborers —men already schooled by previous study, and who will be able as well as ready to gather, for the common benefit, some of that knowledge which will otherwise be but too likely lost.

But I am glad, also, to see others here, who as yet are but imperfectly trained, because, while they have much to learn, they have come here, to one of the best places in which to learn it, since disease may here be studied in its simplest forms.

It has been recommended by some, most fitted to give advice, that the student of medicine should begin with the diseases of the eye, since, through its transparent coats, as through a glass, the various processes of disease and recovery may be seen transacted, and "many of the little wonderful details in the nature of morbid processes may be learned, which, but for the observation of them in the eye, would not have known them at all." The ophthalmic wards of a hospital must, indeed, be revisited at a later period for the sake of the special knowledge to be obtained there, but they may well be visited at first for the elementary teaching which they afford.

Somewhat in the same way, you may come at two periods of your career to the study of children's diseases. *First*, to observe disease in its simplest conditions; then *later*, to investigate the peculiarities of symptoms which result from the tender age of your patients, and the modifications of treatment, which, on that account, may be required.

First, I said, to study disease in its simplest form. The chemist who analyzes a substance, submits it to various processes in order to remove from it all extraneous matters, and then applies to it tests to determine its real nature. This which the chemist does, however, is very difficult indeed, in the investigation of disease. Pure pathology is the doctrine of disease, unmodified by the intervention of disturbing causes from without or from within. To this in adult age we scarcely ever attain. The body, even in apparent health, yet tends imperceptibly to decay. We study disease in its influence on parts already damaged. The follies of youth, the vices of maturer age, the anxieties of business, the failure of hope, all leave their impress on the body, diminish its reparative powers, and render the different organs inapt to do their duty; so that almost all disease appears in a complicated, scarcely ever in a simple, form.

Care, too, which sits at the bed's head of the grown person, does much to retard recovery and to complicate disease. "Is your mind at ease?" said his physician to poor Goldsmith on his death-bed, observing how his pulse outbeat the frequency for which his bodily ailment would have accounted. In childhood there is little or none of this; no regret for the past; no dread of the future. The present is the world in which little children live; pain past is almost forgotten; and this mental tranquility contributes in no small degree to their recovery.

But I will no longer occupy you with insisting on things with which a little time spent here will make you quite familiar. I

will rather make a hasty survey of some of the cases which are now in the hospital, or which have been here so recently that many of you have had the opportunity of seeing them. I select them very much for the illustration they furnish of the unsolved problems which I want some of you to try to answer.

A little boy, aged 19 months, was admitted into the hospital, on the fourth day of an attack of pneumonia of both lungs. His respirations were 69; his pulse beat 148 in the minute. There was dulness at the base of both lungs, especially of the right; fine crepitation was heard below both scapulæ. I scarcely need add that the child seemed very ill. He was drowsy, but at the same time restless. He was very hot and his skin dry. He had some cough, but not very much. A mustard poultice was applied to the back and the chest. A little ammonia was given with small doses of ipecacuanha; beef-tea and wine for food.

In the night, the distress and restlessness were extreme until relieved by spontaneous vomiting; but on the afternoon of the fifth day the child was already better; the respiration had fallen in frequency to 44; and there was slightly improved resonance of the chest. Improvement continued. On the ninth day the respiration had fallen to 21, and the pulse to 124; percussion yielded an almost natural sound; and some largish crepitation was the only evidence remaining of the dangerous illness.

Now, here the recovery took place speedily and decisively, and in a way in which one could not refer it to the remedies employed. Nor is this a solitary case: it is one of many to which attention has of late years been especially called, which raise the question as to when and how far an expectant treatment may be adopted in inflammation of the lungs. It suggests to you the importance of determining the period of pneumonia at which spontaneous improvement is most likely to occur, the circumstances which in any given case justify you in expecting it, and those which, on the other hand, render its occurrence doubtful. Further, there remains the important question whether, though recovery would take place independent of treatment, it yet occurs sooner, or is more complete if treatment is adopted than if the case is let alone.

A girl, 7¼ years old, was admitted with the following history: Nine months before, she suffered from severe pain in her limbs, which yet did not constantly keep her in bed; but she was up every morning, and then as afternoon came on, grew worse, and went to bed. During much of this time her heart beat very

much, and at the end of a month, when the pains in her limbs had already ceased, she suffered so much from her heart that she was confined to her bed for six weeks. When better, she attended for some months as an out-patient, but six months after her illness began, her legs swelled, and her breath became short, and at length she came for admission here.

The heart's impulse was visible in the fourth, fifth, and sixth interspaces; the apex beat in the sixth interspace, one and a-half inch outside the nipple line. The upper dulness limit reached to the third rib, and the inner to a finger's breadth to right of the sternum. The oblique diameter of the heart was five and three-quarter inches, the transverse five, the longitudinal three and three-quarter inches; while, as you can now see for yourselves, there is a very manifest bulging of the whole heart's region. There was a prolonged wheezing systolic murmur heard at the apex, which diminished rapidly in loudness towards the base; the second sound was inaudible at the apex, but clearly heard at the base of the heart.

I am not going to trace this child's history in detail. She got relief from treatment, went out much better in three months, but soon came back in a state of great distress, for now pericarditis had come on. For some time she seemed likely to die, but once more got better, and you see her now, eighteen months after the rheumatism in which her sufferings began.

Now, here you have a case of heart disease, with enormous dilatation of the organ, succeeding to a comparatively slight attack of rheumatism. Each year adds to the child's sufferings, from which she will find rest only in an early grave.

Why is this so? Why does even a very small amount of valvular disease tend in some instances to produce a large amount of dilatation?

It is not an invariable occurrence. So little, indeed, is it invariable, that Dr. Latham notices the probable existence of some compensating power in the young heart, by which atonement is made for the effects of valvular disease: "a certain *protective* power possibly inherent in the growing heart, whereby it can accommodate its form and manner of increase to material accidents, and so suppress or counteract their evil tendencies."

But why is this sometimes? Why not always? Why not often? Is this happy issue rarer now than formerly, and if so, can it be that the change in practice which recent years have brought with them—the abolition of depletion, the disuse of mercury, have rendered the cure of rheumatic affections of the heart less complete than formerly? Or, is it only, and this I

apprehend to be the case, that our diagnostic skill and pathological knowledge have outstripped by far our therapeutical resources, that we discover the ills which we are impotent to cure?

A strong-looking, well-made girl, 10 years and 9 months old, began to suffer causelessly from chorea, three weeks before her admission into the hospital. There was no history of rheumatism in her family, nor had she herself presented any rheumatic symptoms, though there was a weak systolic bruit audible at the apex of her heart, which persisted, but did not increase, either in extent or loudness, during the whole of her illness. the choreic movements were at first limited to the left arm, but they increased rapidly, in spite of treatment, so that a month after admission the child was compelled to be placed in a bed padded all round, on account of the violence of her movements, while deglutition was very imperfect, and speech almost abolished.

She remained in ths hospital for three months, at the end of which time she was almost well, and was sent into the country. She was submitted to very varied treatment, but without benefit, and her eventual improvement was spontaneous. For a time she improved in the country, but at the end of two months returned with a relapse of all her former symptoms, though their severity was far less than on the former occasion. In this instance, medicine seemed just as unavailing as before. The child began spontaneously to improve at the end of one month, was well at the end of two months, and has, I believe, since continued so, though the time is yet too short to feel sure of the permanence of her recovery.

Here, again, are several questions which await an answer. Why is the first attack of chorea almost always the most severe? Why is there no definite relation between the severity of chorea and the severity of the heart affection, and why is the heart sometimes quite unaffected, even though the chorea is very severe? Lastly, why is the heart affected at all, since the assumption of its rheumatic character, though true to a certain extent, is yet by no means always tenable?

Further, what clear indications can be laid down for the treatment of chorea besides the two furnished by the existence of constipation on the one hand, and anæmia or debility on the other, and the combined use of purgatives and tonics which they suggest?

Zinc and antimony, strychnine and belladonna, shampooing and sulphur baths have all been used in the treatment of chorea.

When is the one right, when the other, or in what combinations are they best employed? In what combinations? for I would not have you fall into the error into which the prevalent folly of homœopathy may imperceptibly lead you, of supposing that in order to act at all each remedy must be employed alone. He is the best physician, who knows best not only what remedies to use, but in what combinations; as the skilful general trusts not to his infantry alone, nor alone to his cavalry, but gains his victory most surely and most quickly by using different troops in combination; or,

> "As many arrows loosed several ways
> Fly to one mark."

Two more cases, and I have done for to-day. One is in the hospital now, the other recently left.

A boy, 8¼ years old, was always a backward child, and while teething had three attacks of convulsions. Three months since he seemed causelessly languid for a fortnight; and then he was suddenly seized with vomiting. For six weeks together the vomiting returned daily or every other day. It was associated with an increased languor, and, by degrees, with drowsiness, and with pain in the occiput, which, though constant, became sometimes so severe as to make him scream aloud. A month after the commencement of these symptoms he was first observed to squint, and at the end of two months he had a fit which lasted for half an hour. In the ensuing month these fits returned six times. The vomiting ceased after the first fit, but the other symptoms continued, and became associated with pain on any movement of the limbs, and three weeks before his admission into the hospital it was first observed that his pupils were dilated, and that he had lost the power of sight.

He was a pale, thin child, with a peculiarly wretched expression of countenance; absolutely blind—his right eye looked straight forwards, his left inwards, and both were in a state of constant motion. He had complete power over his limbs. His headache was not constant; his appetite was good, and he did not vomit during the fortnight that he remained in the hospital. Nothing, however, seemed for a moment to amuse or please him, and he was allowed to go home, all the more readily, that his case was not one which held out much prospect of benefit from treatment.

What was this case? There was no family history of tubercle, nor did the boy present any appearance of it. Still the symptoms are not those of any acute inflammatory disease, and I should be disposed to imagine that they were due to the grad-

ual development of some tumor (and these tumors are almost always tuberculous,) which, arising at the base of the brain, had, by degrees, increased until by pressure on the optic nerve it had abolished the power of vision. And here it may remain stationary, though more probably it will continue to grow until it causes death, either suddenly by some outpouring of blood from the vessels at the base of the brain, or more slowly, by the production of inflammation, or effusion, into the ventricles consequent on pressure on the veins of Galen.

Here is, lastly, another case, somewhat obscure, indeed, but yet less so, I take it, than the preceding one:—

A girl, 8½ years old, whose father and two of her brothers had died with symptoms of brain disease, had suffered for a fortnight from troublesome cough, when she seemed unusually heavy, was attacked by violent sickness with headache, and sank speedily into a state of stupor, which continued with intervals, during which her mind wandered and she rambled in her talk, for 36 hours. At the end of this time consciousness returned, and the child sat up in bed, and showed some gleams of cheerfulness, but the pulse, which had been irregular during the state of stupor, still continued so, and the head was held somewhat retracted. Pain in the head and some retraction of it continued, though the child was well enough to be up, and moved about the ward.

She left by her mother's wish in a fortnight, and at the end of another fortnight she returned, much emaciated, complaining of pain which was now referred more to the ears than to the head, of pain also in the neck and in the right shoulder, towards which her head was inclined.

On this occasion she remained in the hospital four weeks. During this time she grew thinner and thinner, her skin became harsh, her abdomen retracted and tender to the touch, and her head was still drawn back as before. Auscultation now found the breathing weak everywhere, but especially so at the apex of the left lung, and percussion there was obviously dull. There was no vomiting, however. The bowels, once constipated, had now become regular, the complaints of headache were less constant, and the pulse had lost its irregularity. General tuberculosis was advancing; the mischief in the brain, I suppose, was stationary.

What is the import of this sudden development of the signs of cerebral disease, and what of their spontaneous passing into abeyance? If we could learn to answer these inquiries aright, we might possibly do something to arrest disease, even though

we were unable to effect its cure. Here, then, is another problem which I leave for your consideration.

But, say you, you came here to be told what I do know, and I have talked to you almost entirely of what I do not know, and that is not the object of a lecture, the purpose of which should be to impart positive knowledge.

Gentlemen, it is not quite so. The acquisition of knowledge implies an active, not a passive, state, and to this it was my object to excite you. It is when you seek, as for riches, and search, as for hid treasure, that you gain it; so, at least, said the man wiser than other men, and who himself wrote of all things, from "the cedar of Lebanon, to the hyssop that groweth on the wall."

You have come to the study of medicine, furnished far differently from those who, like myself, entered on it more than 30 years ago. It is but right that you should turn these advantages to good use. We are, indeed, as has been well said, like people standing together on a hill, which I have climbed before you, and I, to whom the landscape is in some measure familiar, may say to you look here and look there, and you will see this and that. But further, I say to you, the objects there are indistinct to me; but you have perspective glasses of higher power than mine; turn them in this direction or in that, and you may, with patience, discern clearly what I can see but partially, or, with my imperfect instrument, perhaps cannot see at all.

If you visit the wards of this hospital, I may, too, do some of you the service, that I may point out to you what is worth the seeing, and may help to guard you from the dangers of the young student—that of playing with the instrument itself, vain, perhaps, of his dexterity in its use, or of turning it thoughtlessly on trifling things not worth the investigation.

You must not forget that it is your duty, as it is mine, to map out the country for the use of yourselves and of future travellers, to seize its great features, which may serve as landmarks, and not to waste your time on some quaint tree or curious rock which lies quite out of the path along which you have to journey.

"*Nisi utile est quod agimus vana est gloria nostra*," should be your motto, though in a different and lower sense, indeed, from that in which it was employed by the inspired penman some eighteen hundred years ago.—*Med. Times & Gaz.*, Oct. 28th, 1865, *and Phila. Medical News.*

REPORT OF THE COMMITTEE APPOINTED TO MEMORIALIZE CONGRESS IN REGARD TO THE MEDICAL DEPARTMENT OF THE ARMY.

CINCINNATI, OHIO, May 9, 1865.

The undersigned of the Committee appointed by the American Medical Association to memoralize Congress in regard to the passage of a law for the Medical Department of the Army, and to present the draft of such a law to each Senator and Representative, have the honor to report:—

That they took the subject immediately into consideration, but that the time they could command was too limited to enable them to prepare a memorial and draft a law before the adjournment of the session of 1864 and 1865. After an interchange of views among the members of the Committee, necessarily conducted through the mails, a memorial and draft of a law were agreed upon by the majority of the Committee, printed and distributed as directed by the Association, at the commencement of the last session of Congress. This memorial and draft of a law were in the words following, to wit:—

To the Senate and House of Representatives of the United States:

The undersigned, a Committee appointed by the American Medical Association, at a meeting held in the city of New York, in June, 1864, to memoralize your Honorable Bodies in regard to the passage of a law for the better organization of the Medical Department of the Army of the United States, in the discharge of the duty imposed upon them, respectfully represent—

That if the experience of the previous wars in which the country has been engaged had not been sufficient to indicate the importance and necessity of clothing the medical officers of the army with an absolute military rank, that should settle their authority to execute their own functions unquestioned by officers of other branches of the service, the magnitude of the present contest, and its all-pervading interests, have, in their opinion, forever determined this fact. The necessities of present circumstances have forced upon medical officers the exercise of military functions and command, without and even against the authority of law, in some instances, but which is absolutely indispensable to the existence of a Hospital Department. The Act of February 11, 1847, which first conferred military rank upon medical officers, expressly forbids them to exercise military command in the line, or another staff department. Still from necessity, and in obedience to the orders of the Secretary

of War, they now exercise such command, and that under General Orders No. 212, July 9, 1863, emanating from the War Department.

Surgeons in charge of general hospitals are and must be the commanding officers thereof. They are responsible as well for the discipline and administration of those establishments as for the medical and surgical treatment of the sick and wounded. From the nature of the case, none other than a medical officer can discharge these strictly military duties, and wherever an attempt has been made to divorce the military and professional functions in a general hospital, the result has been conflict of opinion and authority, discontent, altercation, and paralyzed efficiency.

Were the claim to an effective and indisputable rank for the Medical Department novel in principle in our service, it might be plausibly controverted; but when the propriety and advantage of such rank in staff departments have been so completely settled, as they have been by the examples of the Quartermaster's and Subsistence Departments, it cannot now be successfully refuted.

Brought into immediate contact with, and exercising the immediate control over thousands of soldiers, charged with the care of their pay, subsistence, clothing, and discipline while in the General Hospitals, the Medical Department alone is assimilated in functions to the officers of the line, and is *de facto* compelled to exercise military command over the persons of soldiers, and whatever of failure there may have been to meet the full requirements of their duties in these respects, is, in our opinion, distinctly to be traced to the defenceless position in which they are left in regard to the interference of other officers possessing the immense advantage of unqualified military rank, with their own management of their own departments.

The grade of the medical officer in command of a general hospital should, in our judgment, never be less than that of a field-officer. Many of these establishments contain more than one thousand soldiers, some of them more than three thousand, a command equal to that of a brigadier-general. The medical directors of armies and military departments have only the rank of majors, and even this restricted, while the chief quartermasters of the same are invested with the unrestricted rank of colonels—the latter exercising no command over soldiers, while the former have from ten to twenty thousand military persons under their control. They are at the same time responsible for the careful and economical distribution of vast amounts of pub-

lic property, and without the experience and ability in this special department, which long and careful training alone can give, the money value of the loss of life which would result would certainly equal the expenditures of the Quartermaster's Department, vast as they are. With at least equal responsibilities, and equal zeal, and equal devotion, the medical officer is denied an equal rank with the quartermaster, and even the limited rank which is conceded to him, is so clogged with restrictions as to be of little avail for the public good.

We, therefore, pray your Honorable Bodies to give these evils your serious consideration, persuaded that the result will be such a remedy as will satisfy the claims of equity, of justice, and of the best interests of the service.

The Committee having been further instructed to prepare a bill for the consideration of Congress, and to "embrace in its provisions a further separation of the Medical Department from the Commanding Officers of the Line, in order to have a more perfect and unrestrained control of its interests and greater efficiency in that branch of the service, in the fulfilment of this duty, beg leave to present the following sketch of such a bill as they think would meet the views of the American Medical Association, and secure the objects they desire:

1. The Medical Department of the Regular Army shall consist of—

One Surgeon-General—Brigadier-General:—
One Assist.-Surg.-General—Colonel
One Purveyor-General—Colonel
One Inspector-General—Colonel
Twelve Staff Surgeons—Lieut.-Colonels
} of Cavalry:

One Surgeon (Major); one Assistant-Surgeon (Captain), and one Assistant-Surgeon (1st Lieut.) for each regiment of Artillery, Infantry, and Cavalry, for the Ordnance and for the Engineer Corps:—

2. For the Volunteer Army whenever called into service:—

One Assist.-Surg.-General, one Purveyor-General, and one Inspector-General: Staff Surgeons as many as are necessary for the command of the General Hospitals, with the same rank as the same officers in the regular service:—

One Surgeon (Major), one Assistant-Surgeon (Captain), and one Assistant-Surgeon (1st Lieut.) for each Regiment of the Line actually in service.

Candidates for the appointment of Assistant-Surgeon shall be examined by a board of not less than three Medical Officers of their own branch of the service.

A second examination by a similar board shall be required for promotion to the rank of Major.

General Hospitals and their Guards shall be under the command of the medical officer in charge, subordinate only to the commander of the Department or Army in which they are located.

A Hospital Corps, consisting of companies of sixty men each, shall be organized as companies of Infantry for duty as nurses, cooks, and guards to General Hospitals.

Promotions in the Medical Department of the Regular Army and volunteers shall be made in accordance with the principles that govern in other departments of the respective forces.

The Medical Director of an army in the field or a Geographical Military Department shall have the local rank of Colonel of Cavalry.

Medical Purveyors of principal Depôts (Surgeons in the regular Army of Volunteers) shall have the local rank of Colonel of Cavalry.

Physicians employed by contract shall have the local rank of 1st Lieutenant at the Hospitals or Posts where employed.

All acts or parts of acts inconsistent with this act are to be repealed.

We have the honor to be, very respectfully,
Your obedient servants,

(Signed) Chas. S. Tripler, M.D.,
Chris. C. Cox, M.D.,
Frank H. Hamilton, M.D.,
D. L. McGugen, M.D.

In preparing this memorial and draft of a law, your Committee found it difficult to reconcile conflicting views and interests, the natural result of the distinct organizations, regular and volunteer, then in the service. They did not think that a law applicable to the then existing state of the department only, would fulfil the expectations of the Association. What was wanted was a plan for a permanent and not a merely temporary organization; a plan capable of being contracted to the limits of a peace establishment, still preserving its integrity, and, at the same time, of being instantaneously expanded sufficiently to meet the requirements of an army large enough to carry on any war in which the United States may hereafter be engaged.

It is evident that in time of peace, none other than regular troops can compose the army of the United States—it is equally evident that in time of war the greater portion of the troops in

service must be composed of volunteers. If a plan had been proposed to merge the medical departments of the two descriptions of troops into one, and if such plan could be successful, it is plain that upon the reduction of the army all would become regular again, and upon the next occasion the distinction would be renewed and its conflicting interests and antagonisms, if they exist, must inevitably be revived.

The great objects of your Committee have been, first, to provide a medical staff for the land forces of the United States adequate to any emergency that may arise; and, second, to clothe the officers of that staff with a military rank that would forever settle the question of their subordination to officers of inferior rank in the other branches of the service.

Previously to the breaking out of the rebellion, the largest armies we have ever set on foot were insignificant in comparison with the enormous hosts that have been kept in the field for the last four years. For the last fifty years, with the exception of the Mexican War, the United States may be considered to have enjoyed uninterrupted peace. Our small force was distributed in scattered posts over the vast surface of the country, in detachments so small as to require little of a medical department beyond the mere prescribing for a dozen men daily at a post hospital. The military mind of the country could perceive no necessity for any military authority being conferred upon a medical officer, and this mind had indolently and thoughtlessly drifted into the idea that such an authority was preposterous and absurd. The school of the last four years has, however, done much toward dissipating this delusion. The wise and thoughtful, particularly in the higher grades, no longer cling to this mouldy fossil, and the present Secretary of War, by conferring brevets upon several medical officers, both regular and volunteer, and the Congress of the United States by enacting a law conferring the unlimited rank of colonel and lieutenant-colonel upon medical directors, has settled the principle that the medical staff is a military branch of the service, equally with the quartermaster's and subsistence departments.

The medical profession owes much to the Hon. E. M. Stanton, Secretary of War, for the several orders he has issued and enforced, conferring the independent command of the general hospitals upon the surgeon in charge, and placing under their command the officers and men constituting the Second Battalion of the Veteran Reserve Corps, thus removing a military disability from medical men, as fatal to their efficiency as it was insulting to their self-respect.

But the laws in reference to the present organization of the medical department of the army, with the exception of that in relation to medical directors, expire by their own limitation with the present war; when the country is declared pacified, things revert to their *status ante bellum*, and without further legislation, the people and armies of the United States are doomed again to encounter the confusion and disappointments necessarily consequnet upon the entirely inadequate organization of the medical department for a state of war.

By attending to this matter now, and by making suitable provisions for a medical department, susceptible of expansion to meet every emergency, this confusion and disappointment may be avoided, our troops always provided with a competent hospital establishment, the mode of appointment of medical officers fixed by law, and not left to the caprices of politicians and the chances of a ballot, and thousands of lives and millions of money saved to the nation.

By leaving the question of organization unsettled during the approaching interval of peace, which God grant may be a long one, we are certainly doomed to incur, upon the breaking out of another war, the same evils that have marked the inception and progress of this, and we shall require a repetition of the same severe lesson of suffering, to educate once more the military mind of the country up to a point that will induce it to yield a tardy and reluctant assent to the now patent fact—that the medical department is as essential to the organization of an army as the engineers, and that an efficient medical department cannot exist without a recognized military position. With these views your Committee would be insensible to the teachings of the past and to your just expectations, if they should fail to urge upon the members of the American Medical Association their earnest recommendation that, as an Association, they shall reaffirm their convictions of the necessity for immediate legislation in reference to the military rank of the medical department, and as individuals each shall pledge himself to use all honorable influences with the Representatives of their several Congressional districts, and the United States Senators from their States, to induce them, at the next session of Congress, to enact the law sketched out in the draft of your Committee, or some other law based upon the same fundamental principle.

All of which is respectfully submitted.

Charles S. Tripler, M.D.,
Chris. C. Cox, M.D.

THE AMAUROSIS AND DEAFNESS OF SMOKERS AND DRINKERS.

By MM. SICHEL AND TRIQUET.

Annales d'Oculistique, Mars; and *Gazette des Hopiteaux.*

M. Sichel, in continuation of a former communication published in 1863, observes that among the forms of cerebral amaurosis there are two which, although little known, are not of infrequent occurrence, and are difficult of cure. One of these, produced by the abuse of alcoholic drinks, he described as long ago as 1837, under the designation of "amaurosis symptomatic of delirium tremens;" and the other, produced by the abuse of smoking, was first described by Mackenzie. Incredulous, as to this last, when first announced, M. Sichel, in the course of 28 years' practice, has frequently met with it, and he believes that there are few persons who can smoke for any long period more than five drachms of tobacco daily, without their vision, and often their memory, becoming affected. In both these forms of amaurosis there is well-nigh absence of all well-marked cerebral congestion, and there is a vagueness in their sthenic or asthenic characters, which may cause hesitation and perplexity on the part of the surgeon, if unaware of the cause in operation. The ophthalmoscopic appearances, as in most old cerebral amauroses, are negative or ill-marked. The optic papillæ, sometimes very white, especially in one of their halves, sometimes slightly injected, have their contours ill-circumscribed or in part effaced. The retina is but little injected, the central vessels being sometimes normal and sometimes enlarged, the central veins being especially so when the affection has reached its last stage. All the characters observed are, in fact, in common with those of other cerebral amauroses. As in many of these, too, the memory is often enfeebled; and in the amaurosis from alcohol there are frequently trembling of the hands in the morning, and at a later period morning vomiting. Both of these varieties are very slow in their progress toward cure, and very refractory to treatment. Usually observed separately, they may be seen together, and in such cases it is not easy to decide whether the tobacco or the alcohol plays the chief part. The treatment of these cases usually occupies a long time, and an essential point, of course, is the discontinuance of the practice that has given rise to the amblyopia or amaurosis. In the few cases in which there is any marked congestion present, this must be met by anti-

phlogistics; but when this is not very positive, bleeding must only be resorted to with the greatest care. As in all forms of passive or old cerebro-ocular congestion, liberal depletion, even by leeching or cupping, and still more even moderate bleeding, soon completes the loss of vision, and this is only slowly and incompletely restored. On the other hand, external and internal stimulants, such as liniments, flying blisters, camphor, strychnine, etc., resorted to before a moderate antiphlogistic and derivative treatment has been put into force, only aggravate the disease. When there is but little congestion, mild aperients are very useful, such as equal parts of cream of tartar and magnesia, alternating with pills of gum ammoniac, sulphate of potass, and aloes. In drinkers these means will not be borne, and minute doses of rhubarb and magnesia may be substituted. Cold water should be applied to the forehead and eyes, while the lower extremities are irritated by sinapisms, dry cupping, etc. At a later period are indicated stimulant liniments to the circumorbital region, flying blisters, first to the nape, or behind the ears, and then to the temples; and, in very obstinate cases, the various internal stimuli, as camphor, arnica, strychnine, etc., may be tried.

M. Triquet states that in smokers and drinkers an insidious and obstinate form of otitis frequently becomes developed. There is a kind of numbness or torpor of the ear, with a sense of cold, but rarely any pain. There is no cerumen in the meatus, the membrane and ossicula are in a normal state, and there is little or no vascularity. There is, however, extreme dryness with very minute granulations of the pharynx, nasal fossæ, tubes, and middle ear. Frequently both ears are affected, but one has always commenced being so before, and is more deaf than the other. The deafness, without being very troublesome at first, rapidly increases. Noises in the ear almost always exist at an early period, and it is of importance to notice that they assume a hissing sound. The affection exhibits itself in three periods:—1, that of excitement, in which there is intolerance of noise, and a hissing noise in the ear; 2, that of depression, in which the hissing sound disappears, or only remains as a distant and feeble echo; and 3, that of a paralytic condition of the auditory nerve, in which the sense of hearing is more or less completely, and often permanently, lost. In this period there are also often trembling of the tongue, embarassment of speech, and disturbance of vision. The prognosis is very unfavorable, for those patients alone are susceptible of cure who will consent to leave off the bad habit which has produced the affec-

tion. For treatment, in the very early stages, cupping of the mastoid processes and drastic purgatives, and then alteratives, as calomel, sulphur, and small doses of arsenic, are indicated. Locally stimulating fumigations, and weak injections of strychnine or veratrine have proved useful; electricity has always done harm.—*British & For. Med.-Chir. Review, and Dental Cosmos.*

BLEPHARITIS CILIARIS AND PHLYCTENULAR CONJUNCTIVITIS.

By E. WILLIAMS, M.D., Professor of Ophthalmology, and Aural Surgery, Miami Medical College, Cincinnati, Ohio.

It is not my purpose to give a lengthy description of these common and well-known diseases, but to call your attention to some practical points in their treatment. Still a hasty sketch of their characteristic features will facilitate a better appreciation of the therapeutic measures which I wish to present. Whether associated, or existing separately, blepharitis ciliaris (sometimes called blepharitis marginalis—bleparadenitis—tinea tarsi) and phlyctenular or pustular conjunctivitis occur usually in early life and in the same class of patients. The period of life at which they are most frequent is from the second to the fifteenth year. If they are seen after that age, it will generally be found to be but a continuation of the same affection from an earlier period. Children of a strumous or scrofulous diathesis are the almost exclusive victims of these maladies.

Strictly speaking, blepharitis ciliaris, as the name intimates, commences in the individual follicles of the eyelashes, and invades the other textures of the lids subsequently. It is an inflammation of those follicles followed by little abscesses, of which the cilia form the centres. These minute collections of pus become confluent along the edge of the lid, agglutinating the lashes in little tufts, and forming scabs or crusts as they desiccate. These adhere very firmly, and when removed forcibly, produce pain, often bring away some of the hairs, and the surface beneath is found to be raw or ulcerated—perhaps bleeds. These patches of disease may be limited, or extend the entire length of the lid. When this local difficulty has lasted for some months or years, the bulbs of the lashes are gradually obliterated, the hairs fall out, grow in a stinted form, or cease altogether; giving rise to that thickened, red, perhaps partially everted state of the edge of the lid, called *lippitudo.*

Blepharitis ciliaris, when once well established, usually persists for years, or for the remainder of life if cleanliness and favorable hygienic measures are impracticable or not enforced. The amount of redness, swelling, and soreness of the lids varies very much under special provocations or favorable circumstances. The smouldering fire at the roots of the lashes, however, never ceases; and that is the focus from which they flame out. Intercurrent attacks of phlyctenular conjunctivitis often complicate and aggravate the difficulty; and not very unfrequently, in the chronic forms, there is set up blennorrhœa of the lachrymal sac, with its consequences. On the contrary blepharitis marginalis may, in its turn, be provoked and perpetuated by dacryocystitis, stricture of the nasal duct, and dilatation of the sac. Now these conditions mutually aggravate each other, and the necessity of embracing them all in the treatment is self-evident. Eczema and other eruptions about the face and head, and especially in and around the nostrils, causing a constant running, with redness and thickening of the nose, or the formation of scabs, are likewise a very frequent and troublesome complication.

Phlyctenular conjunctivitis (often called scrofulous ophthalmia), is marked by symptoms so peculiar as not to require a tedious description. It is a partial inflammation, commencing in the conjunctiva of the globe, and attended by pustules or vesicles. These so-called phlyctenulæ are most commonly seated on the line of junction of the cornea and sclerotica, but sometimes they are seen entirely on the one or the other of these structures. They are inflammatory accumulations of serum or of pus under the epithelial layer of the conjunctiva, and when located on the cornea are designated phlyctenular keratitis. These may be absorbed without rupturing, but generally the elevated epithelium bursts and leaves superficial ulcers, called on the cornea, facetted ulcers. In favorable cases they then heal, by being first covered with a new epithelial layer, that makes them appear shiny and smooth in the bottom, and a subsequent reproduction of the deeper layers. On the cornea they leave little circular depressions, readily seen by looking obliquely at them, which persist a very long time before they are filled to a level with the general surface. If the ulcer extends deep into the lamellæ of that membrane, permanent, or at least long persisting, white specks or opacities are left behind. When situated towards the centre of the cornea, and a bundle of vessels develops under the epithelium, running from the conjunctiva sclerotice to the pustule, lymph often exudes in a nar-

row strip along the course of the vessels, leaving a concentric opaque streak in the cornea. In some cases, on the other hand, a series of vesicles following from the margin towards the centre, are produced, attended by the gradual pushing forward of the little loops of vessels, and leaving when they subside the same riband-like opacity just mentioned.

So long as the phlyctenulæ are confined to the conjunctiva scleroticæ, there is seldom any marked intolerance of light or other suffering. But when they come out on the cornea, especially if near the centre, they nearly always give rise to extreme photophobia, profuse lachrymation, and sometimes severe pain. The intolerance of light is so intense often, that the little sufferers seek the darkest corners, lie on their faces and bury their eyes, covered with their hands, in a pillow or anything they can get, so as, if possible, to exclude every ray of light. This confines the perspiration, heats the eyes, aggravates the eruptions of the face, and is in all respects the most distressing symptom, lasting frequently for weeks together before any light can be endured. This feature of the disease is more marked in the morning, giving way towards evening, so that after sundown the child may open its eyes better. This excessive tenderness to light, resulting in reflex, spasmodic contraction of the orbicularis palpebrarum, and profuse lachrymation, is the result, in my judgment, exclusively of irritation of the corneal filaments of the fifth pair of nerves. Whenever I see these delicate, scrofulous children, with their eyes covered and spasmodically closed, I am certain that they have corneitis with little specks or ulcers. Still I always insist on holding the child's head between my knees, with its face up, and forcibly opening and examining the eyes, so as to see the exact state of the cornea. This is less cruel and also less *irritating to the mother*, than plunging the child's face in ice-water, as recommended by Graefe, and others.

In extreme cases chloroform may be used, but I seldom find it necessary. The photophobia is frequently out of all proportion to the amount of local trouble; but there is always some deposit in the cornea, or abrasion of its surface, which can be detected by a proper inspection.

It is comparatively seldom that these phlyctenulæ give rise to ulcers that invade the deeper layers of the cornea; but sometimes this occurs. The edges and bottom of the ulcer then become infiltrated with a dirty-white or yellowish-colored deposit, which, as it goes deeper and deeper, becomes complicated by hypopium, and eventually, if not properly treated,

results in perforation and prolapsus of the iris. This tendency to deep ulceration and perforation of the cornea in pustular conjunctivitis, is sometimes epidemic. A few months ago, some seventy or eighty children in one of our neighboring orphan asylums, were attacked within a few days with this disease. Rapid ulceration, hypopium, and perforation took place in many of them, and several were blinded in one or both eyes before any treatment was thought of. Some of them had had granulated lids previously, and some had not. The affection assumed the form of general catarrhal conjunctivitis, with large sloughing phlyctenulæ, which were not influenced by anything but repeated paracenteses of the cornia, atropine, and compression with cotton and an elastic bandage.

In the treatment of this class of diseases I have used for the last eight years a preparation, not found in any of our books, which is so uniformly and promptly beneficial, that I have abandoned all the other mercurial local applications in its favor. When *opportunely* and properly applied, it acts like a charm, and patients or their friends nearly always come back, if they ever have another attack, and ask for some more of that *brown salve*. The formula for its preparation, I found in a foot-note in an old edition of Wilde on the Ear. He recommended its use very highly in chronic diseases of the dermoid lining of the meatus auditorius externus. It occurred to me that its peculiar properties might prove useful in the diseases under consideration. I tested it extensively and faithfully, and it has far surpassed my most sanguine expectations. I call it the *brown citrine ointment*, and write it Unguent. citrin. rub. At my request, Mr. A. Fennel and Prof. E. L. Wayne, well-known chemists and druggists of this city, have experimented in making the ointment till they have very much improved its quality. The original formula was the same as that of the U.S. Pharmacopœia for the preparation of citrine ointment, excepting that cod-liver oil was substituted for the axungia and the neatsfoot oil. Still it was somewhat granular and coarse, till Prof. Wayne finally succeeded by *reheating*, and then stirring till it was cool, in making a dark mahogany-brown salve of uniform consistence, tenacious, and readily melting with the temperature of the body. When rubbed on the lids or applied to the conjunctiva, it melts in a few seconds, spreads and adheres a long time to the lids, or, if used in the eye, is rapidly diffused over the ball by the movement of the lids, with *very little irritation*. It can be used in its pure state, and does not need to be *removed* afterwards at all. My treatment for ble-

pharitis ciliaris is very simple. The first thing on which I always insist, and without which no treatment does much good, is to keep the edges of the lids *absolutely free from scabs or scales.* I have the eyes bathed with tepid water morning and evening, till the scabs are soft and can be readily scraped off, or rubbed off with a soft rag. If there is much rawness and soreness of the margins of the lids, I trim off the lashes with a fine pair of scissors, as close as possible. This is much better than pulling them out, as recommended by some authors; and when so trimmed, it is much easier to keep the lid free of scabs. If the lids are swollen and very sore, I have them poulticed every night for a few days; and sometimes when there are ulcers or raw places along the roots of the lashes, I touch them lightly for a few times, at intervals of two or three days, with a point of nitrate of silver. Every night, after the washing and cleaning, the salve is rubbed well along the edges of the lids with the finger. If it irritates and causes the skin to puff up and look redder next day, which it rarely does, the patient may omit the use of it the next night; otherwise, it should be applied every evening at bedtime. Its continuance two or three times a-week for several weeks or months after the disease is entirely relieved, should be urged, to prevent a relapse. If there is much conjunctivitis, I prescribe a solution of four grains of sulphate of morphia, and half a grain of sulphate of copper or zinc, to the ounce of water, dropped into the eye three times a-day. Internally, such patients should always take iron or tonics of some kind. I usually gave the liquor ferri iodidi, in doses suited to the age of the subject, and keep it up for several months, to secure a *radical result.* Of course, regular exercise in the fresh air, good nourishing diet, bathing followed by friction, and the avoidance, as far as possible, of all causes of irritation, are important hygienic measures in this class of diseases.

In phlyctenular conjunctivitis where the vesicles have their seat on the conjunctiva scleroticæ, or being on the cornea, give rise to but little intolerance of light and lachrymation, this salve again is most valuable. A portion of it, say a small drop, should be put from the end of a knitting-needle or probe, between the lower lid and the ball and the upper lid, then moved up and down a few times till it is spread freely over the cornea. This ought to be done at bedtime. The larger portion of the salve is soon washed and pressed out on the edges of the lids, and, if blepharitis exists, can be usefully rubbed along the margin; otherwise it may simply be wiped away. If the conjunctivitis is more general, and there is much mucous secretion, I direct

the astringent given above; otherwise, the ointment alone suffices perfectly.

Phlyctenular corueitis is treated in the same manner, when the acute symptoms have begun to abate, or when it assumes a mild form from the start. If there is marked dread of light, spasmodic elosure of the lids, and epiphora, a few days of preparatory treatment are neeessary. For the relief of the photophobia and other symptoms arising from aeute inflammation of the eornea, there is nothing equal to the local applieation of a solution of atropia. In a child from two to five years old, I preseribe a solution of gr. j. to aquæ ℥j., to be dropped into the eye from three to six times in the twenty-four hours, according to the intensity of the symptoms. If they are over five years old, a two-grain solution may be directed. Internally, the sulphate of quinine in very liberal doses, say from one to two grains, even more where the photophobia is extreme and obstinate, three times a-day, with the solution of sulphate of atropia locally, nearly always overeomes these distressing symptoms in a few days. If the quinine alone does not subdue the intolerance of light, I combine opium with it, giving from half a grain to a grain with the quinine three times a-day. Under this treatment, the child begins to open its eyes and bear the light better in a short time. It is astonishing what effect the atropia has in quieting the eye and allaying the inflammation. When the aeute symptoms have decidedly abated under this treatment, the salve in the eyes once a-day may be tried, and if well borne, kept up for several weeks. It then not only allays irritation, and favors the healing of the phlyctenulæ, but promotes the absorption of the remaining opaeities. After the first few weeks the quinine may be left off, or eontinued in smaller doses, in combination with iron; or, what is preferable, the iodide of iron may be substituted for it. When the aeute symptoms and redness of the eyes are relieved, the atropin also may be suspended, and the case left to the use of the salve alone.

The eczema, and other eruptions about the face, should be smeared every night with the same ointment. It aets very promptly in relieving all seabby eruptions on the faee, head, and elsewhere. Instead of fearing to heal these up, I always try to get rid of them—especially the sore nose, which keeps the eyes irritated and protracts the cure—as soon as possible. Blisters and counter-irritants of all kinds should be strictly avoided, as doing no good and increasing the eruption of the face. Should the disease of the cornea assume the form of deep ulceration and hypopium, the energetic use of atropin,

the compressive bandage, combined with paracentesis corneæ once a-day, have yielded far better results than any other means that I have tried. The paracentesis often checks the progress of the ulcer immediately, and prevents perforation; or if it does not prevent perforation, it limits the lateral extension of the ulcer, and thus helps to save the cornea. I generally puncture the cornea once a-day, under chloroform if necessary, for several days, till the hypopium and extension of the ulcer are relieved. I puncture the cornea to evacuate the aqueous humor and relieve tension, without regard to the pus. After the paracentesis, the pus or lymph is rapidly absorbed. I select the outer part of the cornea for the operation, simply because it is most convenient. I cannot too highly recommend this little operation in all cases of hypopium keratitis, as recently described by Roser, Von Graefe, Weber of Darmstadt, and others. Where there is a distinct abscess of the cornea, Weber's recommendation to puncture through the collection of pus is sometimes preferable, but must be done with great caution, to prevent the too sudden evacuation of the aqueous humor. He enters the needle at the most dependent point of the pustule, and passes it obliquely through, so as to enter the anterior chamber at the upper part. The aqueous fluid thus washes out the abscess as it escapes, and the further subsidence of the pus between the lamellæ is prevented. As a rule, I much prefer puncturing away from the seat of the ulcer.

I would say, for the information of any who may wish to get a good sample of the brown salve, that it can be ordered in any quantity of Suire & Co., druggists, N.-W. corner 4th and Vine streets, Cincinnati. I will not consume space in the discussing of the merits of other forms of mercurial salves, powdered calomel, etc., in these affections. They are all useful when used with discrimination, but in my practice very much inferior to the brown salve. The use of a seton in the temple, in phlyctenular corneitis, as recommended lately in the Ophthalmic Hospital Reports (London), Vol. IV., part iii, by Watson, I have never tried, and probably never will. Dr. Pagenstecher, of Wiesbaden, in his Klinische Beobachtungen, etc., 1861, recommends a salve of the amorphous yellow oxide of mercury very highly in the same cases. I tried it some years ago, but found it was very much more irritating than the brown salve and less efficacious. In the *Ophthalmic Review* of July, 1865, is an excellent article from the pen of Dr. Pagenstecher, on the value of yellow oxide of mercury ointment, and the method of preparation and using. I have no doubt but he gives

a candid and well-formed opinion of its efficiency; but a comparative trial of the two preparations has led me to adhere to the brown salve as much preferable.—*N. Y. Medical Record.*

ON ANÆSTHETICS.

By J. M. CARNOCHAN, M.D. Surgeon in Chief to the State Emigrant's Hospital, New York, &c., &c.

I desire to present, through the pages of the *Medical and Surgical Reporter*, a general statement of the facts respecting three surgical operations which I performed, using nitrous oxide gas, administered by Dr. Colton, as the anæsthetic, and my opinion on the value of this agent as compared with chloroform and ether.

The first operation took place on the 22d of last July, and was the removal of the entire breast, and glands of the axilla, for cancer. The patient a lady of feeble health, was suffering from disease of the throat and lungs and general debility. In thirty-five seconds from the time she began inhaling the gas, she was in a profound anæsthetic sleep. She remained insensible for sixteen consecutive minutes, until the operation was completed, and in forty seconds, from the time the bag was removed, awoke to consciousness without nausea, sickness, or vomiting, as is so often the case with the inhalation of chloroform and sulphuric ether. The second and third capital operations occurred at the State Emigrant's Hospital, on the 2d of December, and consisted of two amputations of the leg. The time required to produce an anæsthetic sleep in the first patient, a male adult, extremely debilitated and worn out by disease, was forty-five seconds; whole duration of the operation and influence, two minutes and a-quarter. No nausea or unpleasant symptoms.

The third operation was on a boy of about 13 years of age. The time consumed in the inhalation, operation, and recovery from the anæsthetic sleep was two minutes, the gas working equally as in the other cases, and the patient, after complete anæsthesia, awaking entirely free from unpleasant symptoms.

For minor operations, or for capital operations, such as amputations which when properly performed should require but a few minutes, I have no hesitation in stating that the nitrous oxide gas, as an anæsthetic, is far superior to either chloroform or ether. Insensibility is suddenly produced, and the patient

recovers consciousness quickly, the operation being attended by no nausea or sickness, and without the dangerous effects often incident to chloroform and ether.

It is worthy of remark that the nitrous oxide gas approximates, in its chemical combination, to the composition of the ordinary atmosphere, and we may thus, inferentially, account for its more favorable influence. Whether it can be used in operations which from their nature require from half an hour to an hour's time, remain still to be proved by actual experiment.

The duration of the anæsthetic influence in the case of the first operation, previously alluded to, is the longest on record; and I may here state that this is the first capital operation performed under the influence of the gas, since the great discovery of Wells, of Hartford, twenty-two years ago, that a harmless sleep could be produced by a chemical agent, which could annul for the time being the greatest suffering. It is not at all improbable that had Wells lived and had the boldness to follow up his early successful experiments, chloroform and ether would never have been thought of as anæsthetics.

To G. Q. Colton is due the credit of reviving the use of this important agent, in the practice of dentistry, after a lull of twenty-two years.

The value of a safe anæsthetic agent, which can be used without anticipation of danger by the patient, is a great boon to suffering humanity, and I have related thus minutely its action in my own cases, in the belief, that if similar favorable results are met with by others, the nitrous oxide gas will supersede all other anæsthetics now in use.—*Med. & Surg. Rep.*

ON EPIDEMIC, OR ARMY ITCH.

By L. C. BUTLER, M.D., Essex, Vt.

Perhaps I cannot better respond to the request of your correspondent in the *Reporter* for Jan. 6th, than by sending a copy of the Report made to the Vermont Medical Society, with such emendations and alterations as may be necessary to adapt it to your columns. I was not aware, till since the publication of the proceedings of our State Society in the *Reporter*, that the disease in question was so wide-spread in its ravages. It seems to be limited in its circumference only by the extent of territory from which recruits were sent to and returned from the Union

army. It is not indigenous to northern soil, nor is it the legitimate offspring of any disease known among us. Nor can its history be traced among the archives of medicine. The "oldest" physician does not recognize it as a "familiar" face, and so has little advantage over the younger practitioner in its diagnosis or treatment. It is no respecter of persons. It pays no deference to age, sex, or condition. Pulpit, forum, and bar, learned and unlearned, rich and poor, are all alike the objects of its peculiar friendship. It rides in a coach as cosily as it nestles among the rags of poverty. It sits as jauntily upon the luxurious sofa in silks and satins, as upon the hard floor. It sleeps as quietly (?) upon nature's bed and under nature's broad covering, as upon the downy couch and behind damask curtains. It seems to recognize no known law of incubation, progress, or termination. That it is contagious, highly so, there is no doubt. It is somehow communicated from one to another. Sometimes from actual contact, and sometimes without; sometimes as rubeola and scarlatina, and sometimes more as an epidemic. Its progress is better defined by the intolerable itching and scratching it occasions.

So far as its appearance in these parts is concerned, it can be traced almost invariably to southern camping grounds, whence it has been transplanted by the tramp of armies, and the return of our brave boys from the "sacred soil" to their various homes. It is not a native "to our manor born." It is an importation, a peculiar child of southern generation.

In regard to its nomenclature, possibly the persevering student of Good may find in that stupendous compendium of nosology, and nosological infinitudes, some huge Latin name applied to it; but the practitioner who has seen it and treated it will be far better able to say what it is *not*, than what it *is*. It defies both nomenclature and classification. Taking Néligan as our standard, it does not belong to the *Exanthemata*. It exhibits no inflammatory tendency. Nor to the *Pustulæ;* it has no pustules. Nor to the *Squamæ*, for it produces no secretion of any laminated whitish scales on the cutaneous surface. Nor yet to the *Hypertrophæ*, or *Hemorrhagiæ*, or *Maculæ;* nor does it belong to the *Vesiculæ*. It is not *Scabies*. In this disease there is said to be a delicious satisfaction in hunting out and exposing to the full blaze of daylight, the ugly *crab*bed parasite, pathognomonic of it, that covers its burrowing place in the skin under a flood of water. Progress has been made in relieving the world of a pest, and momentary relief is obtained. But no such satisfaction is vouchsafed to the unfortunate victim

of "army itch." It is scratch, scratch; the more, the greater necessity; wriggle and twist "from night till hoary morn;" for the itching is quite tolerable during the daytime, but most intolerable during the night.

In many of its characteristics it corresponds most nearly with the *Papulæ*, and with the genus *Prurigo;* and yet that name gives only an inkling of some of its peculiar symptoms, while it affords no therapeutic indication.

Unlike *prurigo*, this disease is highly contagious. It has no vesicle, nor has it any pustule, yet sometimes the eruption, from the incessant irritation it occasions, forms a discharging surface, upon which scabs are formed. It seldom (in my opinion never) in its inception, is found in the groins, axilla, armpits, or between the fingers. It is always found upon the arm, forearm, chest, abdomen, or lower extremities, and, in some rare cases, upon the scalp. Sometimes it is a fine eruption, about the size of a millet seed, hardly discoloring the skin, or raised above it; then, again, it resembles rubeola, and gives a marked sensation of roughness to the cutaneous surface. The attending pruritus is sharp and stinging, causing almost incessant scratching, by which the papulæ are torn, and a minute blackish crust formed on their apices, giving the eruption a peculiar characteristic appearance. Underneath this crust is a minute red point, which fades away as a new crop makes its appearance. In long-continued cases, complicated with other skin diseases, or accompanied with severe constitutional symptoms, suppurating sores may be formed upon different portions of the body, which will test the patience of both physician and patient in their cure.

Whilst, therefore, it so nearly corresponds with the description given in the books on *prurigo*, still the remedies ordinarily prescribed for that disease will produce little, if any, curative effect in this. It is, in fact, *sui generis*, and no better name can be found for it than that which has been given to it in common parlance, from its recognized origin, "*Army Itch.*" And yet, this only represents its outward manifestation, the cutaneous affection. Back of this, and perpetuating the disease, is the *materies morbi*, which the force of every pulsation sends through the whole system. To cure the one, the other must be eradicated. Constitutional as well as local remedies must be employed. The latter are useless without the former.

In accordance with these views, I begin and end the treatment with constitutional as well as local remedies, as follows:—

℞. Syr. Sarsap. Comp., ---------- f.℥iv.
Sodæ Arsenias, ---------- gr. iv.—viij.

M. Dose, teaspoonful, morning and evening.

To this mixture, if there be considerable derangement of the stomach or biliary organs, I add, *pro re nata*, Thayer's fluid extract of iris versicolor, leptandrin, pipsissewa, or podophyllin as seems best adapted to the case. The external application is composed as follows:—

℞. Pix Burgundica, ---------- ℥iv.
Hydrarg. Oxyd. Rub., ----------
Plumbi. Oxyd. Rub.,----------
Terebinth Veneta, ----------āā ℥j.
Butyri Recentis, ---------- ℥xij.
M. (Adeps will not answer.)

The first three ingredients should be finely pulverized before being mixed with the last two, and then constantly stirred over a slow heat until all are intimately blended. Then place the dish upon ice or cold water, and stir again until the whole becomes the consistence of an ointment. A small portion of this ointment should be rubbed in thoroughly upon the eruption, morning and evening.

Great care should be observed in regard to cleanliness. The under clothing should be changed twice or thrice a-week, and an occasional ablution of the whole body with Castile soap and water, would not only tend to allay the cutaneous irritation, but expedite the cure. The diet should be carefully regulated. No pork grease in any form should be allowed. Pastry, highly seasoned food of any kind, stimulating condiments, should be avoided as directly calculated to perpetuate the disease. The patient should not be starved, but the diet restricted to those articles which are plain, simple, and nourishing, and which will not tax too heavily the digestive organs.

The course of treatment I have thus indicated, is the result of some investigation and observation. It has been adopted after a thorough trial and failure of many prescriptions. In my hands, it has been uniformly successful; I can call to mind no case which, when the directions have been carefully followed, has not been cured by it. Time, patience, and perseverance are necessary to accomplish the result, but it is sure. Recent cases are more speedily cured than those of longer duration. I write with the more confidence, because I have tested the treatment in hundreds of cases, and have yet to see the instance of failure. I prepare the remedies myself. I do not deal out the ingredients to the patients, and leave them to prepare the ointment with such grease as they may happen to have. The prescriptions are compounded carefully by weight and measure, and

just the heat necessary for their intimate mixture. And, having taken all these precautions, which I regard as important, I watch the progress of the cure, and am not disappointed in finding the intolerable itching allayed, so that the patient will enjoy a quiet night, in many instances, from the first application, and the eruption fading away and disappearing. In other localities, or in the hands of other practitioners, they may not prove as uniformly successful, but where other remedies have failed, these are spread out before the profession as being worthy, at least, of a thorough trial.—*Med. & Surg. Reporter.*

Editorial.

Medical College Instruction.—The regular clinical and reading term in the Chicago Medical College, will commence on the first Tuesday in March, and continue until the first of July. The course of instruction will consist of one clinic on Mondays, Tuesdays, Thursdays, and Fridays, in Mercy Hospital, and on Wednesdays and Saturdays in the College Dispensary, making one clinical lecture every day as a part of the regular course. In addition, the student will have free access to the clinical instruction given in the County Hospital, which is within five minutes walk from the College. Besides this ample provision for clinical instruction, at least one familiar lecture and examination will be given each day, by the members of the College Faculty. Ample material will also be furnished to those who wish to pursue dissections.

The Spring and Summer Term, as thus arranged, affords very superior advantages to all such students as can afford to remain in the city until July. It ensures a systematic course of practical and demonstrative instruction of the most valuable character, without the crowding of many topics upon the mind the same day, as in the regular winter term. It is desirable that it should be distinctly understood, however, that this summer reading and clinical term is merely supplementary to the annual lecture term, and in no case to be counted as *one college term*

by the student in making up his requirements for graduation. It has been no part of the objects of the Faculty of the Chicago Medical College to increase the *facilities* for the graduation of students, by making two lecture terms in one year, or by adhering to one short and wholly inadequate term. On the contrary, their great leading object is to induce medical students to take a higher and broader course of medical instruction, before attempting to graduate. The Summer Course is free to all the matriculants of the College.

County Hospital.—At a regular meeting of the Medical Board of the County Hospital, located in this city, it was decided to open the institution, at once, for clinical instruction. For eight months of the year—from Oct. 1st to June 1st—there will be given four clinics a week, two medical and two surgical. For the remaining four months, viz.:—from June 1st to Oct. 1st, there will be two clinics a week, one medical and one surgical. The clinic days are Tuesdays and Fridays, at 1½ o'clock P.M., which will be observed throughout the entire year.

The profession of the city and country are invited to visit the hospital at any time, and especially on clinic days.

The following gentlemen have been elected and duly installed in the duties of their office:—E. T. Quales, M.D., House Physician, W. H. Hutchinson, Assistant.

Chicago Medical College Annual Commencement.—The Annual Commencement exercises of the Chicago Medical College were held March 1st, 1866, in the Hall of the College, No. 1015 State Street. A large number of the relatives and friends of the graduating class were present, filling the Hall to its utmost capacity.

The exercises of the evening were opened by prayer by Rev. Mr. Trowbridge.

The Graduating Class.—The President, Dr. H. A. Johnson then conferred the degree of Doctor of Medicine upon the members of the graduating class, which was composed of the following named gentlemen:—

J. N. Bishop, H. W. Boyd, James Brewster, W. H. Buchtel, D. F. Crouse, J. W. Filkins, C. Hamilton, H. Harris, W. Horne, D. S. Jenks, C. T. Johnson, J. F. Kelsey, E. A. Lee, J. McCarthy, H. C. McCoy, S. A. McWilliams, W. E. Morris, W. A. Nason, Henry Shimer, Lyman Ware, N. W. Webber, Herbert York.

Ad Eundem—Drs. W. H. Baxter, W. S. Caldwell, George H. Calkins, W. D. Carter.

Honorary—Drs. J. Charlton, S. France, W. C. Matchette, J. P. Randall, L. D. Robinson.

The prizes for the best theses were conferred on S. A. McWilliams and Henry Shimer.

Address of the President.—After the class had received their diplomas, the President addressed them as follows:—

In the early history of the medical profession it was customary to require candidates for medical honors to take an obligation to faithfully perform the duties of their profession. We have not required of you, gentlemen, formally, this obligation; but in conferring upon you the degree of doctor of medicine the College is in the most emphatic manner indorsing your professional character, and recommending you to the public confidence. In accepting this degree, you are under the implied obligation no less binding than the Hyppocratic oath, to faithfully and truly perform the duties of the high calling to which you have this evening, consecrated your lives. You are virtually pledged to a life-long service in the fields of science and art. You have promised to conscientiously use the power and influence of your profession for relieving suffering, and for the promotion of the best interests of humanity. In the name of the College, then, I charge you to cultivate science with an earnest desire to know the truth and to practice the art of medicine and surgery, ever remembering its legitimate use—the relief of suffering and the lengthening, if possible, of human life. And, finally, to cherish in your own hearts every social virtue, loving purity, goodness, and truth; so shall your lives be honored and your memories cherished.

Award of Prizes.—Dr. N. S. Davis then presented to Messrs

S. A. McWilliams and Henry Shimer the prizes for having written the best theses in the class. Mr. S. A. McWilliams received the first prize, which consisted of a photographic likeness of the donor, Dr. DAVIS. Mr. Shimer received the second prize, a copy of the transactions of the Chicago Medical Society from the year 1856 to 1864.

The Valedictory.—Prof. WM. H. BYFORD then delivered the valedictory address to the graduating class. The subject of the lecture was "The Philosophy of Trades and Professions." The lecturer said that the great end of learning trades and adopting professions was to get money. The great aims were selfish; but the professions of medicine and divinity were exceptions, for the practitioners in both these professions aimed at doing good. The physician could not do like the tradesmen, —"get all he can and keep all he gets," but his services were paid for according to the generosity of the people.

The speaker then proceeded to show the relation that the physician bore to the other two learned professions. The three learned professions had their foundation in the weaknesses of mankind. The legal profession was brought into existence becausethere were in the world weak men and rascals. The doctor had to deal with the bodily ills of mankind, and the clergy had the moral evils of the world to repair. The lecturer proceeded to show the vast field of knowledge open to the medical practitioner, and advised each one of the class to turn his attention particularly to some branch of the profession, since it was impossible that one person should be profound in them all.

He closed by thanking the class for their uniform diligence and good conduct while members of the Institution, and hoped they would all honor the profession they had adopted, and the College from which they received their diplomas.

At the close of the exercises, the President announced that the graduating class, together with their friends, would repair to the residence of Dr. Hollister, No. 30 Washington Street, where a bountiful supper would be served.

The meeting then adjourned.

At the residence of Prof. Hollister, the company enjoyed

not only an elegant entertainment, but a most delightful social conference, which was not terminated until a late hour of the night.

Chicago Medical Society.—*Pathological Specimens and Cases.*—At the regular meeting of this Society, held February 9th, 1866, Dr. N. S. Davis presented the heart of a patient, whose history was briefly as follows:—About eight months previous to his death, he was thoroughly exposed to cold and wet, resulting in an attack of rheumatic fever that continued several weeks. After the fever subsided, he so far regained his health as to be able to do some work, but never fully recovered. His breathing was embarrassed whenever he took exercise, and about six weeks before his admission into Mercy Hospital his feet and ankles began to be œdematous, and his respiration more oppressed. The œdema increased rapidly, and at the time of his admission, which was the first of his coming under the observation of Dr. Davis, the superficial areolar tissue, not only of the upper and lower extremities, but through the whole extent of the body, was thoroughly œdematous, giving to the patient a very bloated aspect. His respiration was extremely difficult, accompanied by a mixture of dry, wheezing, and sharp submucous rhonchi through the whole extent of the chest, with decided dulness over the lower and posterior parts of the lungs. His countenance was pale, bloated, and expressive of anxiety; pulse feeble, frequent, and intermitting; the impulse of the heart feeble, and the systole accompanied by a loud, harsh, and prolonged bellows murmur, most intense one inch directly below the nipple, and a slighter rough sound with the diastole; urine very scanty and highly albuminous; little or no appetite, and bowels inclined to constipation. The case was made the subject of a clinic, and each member of the class in attendance had an opportunity to listen to the sounds of the heart and lungs.

The diagnosis was, extensive thickening of the valves in the left cavities of the heart, from previous endocardial inflammation; renal congestion with universal anasarca; and some œdema of the lungs, the latter threatening to terminate the life

of the patient by suffocation in a very short time. As was anticipated, the pulmonary œdema rapidly increased, and the patient died on the third day after admission. The heart, which was the only part presented to the Society, was moderately increased in size as a whole, and covered with more fatty tissue than natural. There were no external traces of inflammation. On opening the cavities of the right side, the appearances were strictly natural. Both the auriculo-ventricular and the polmonary artery valves were perfectly free from any abnormal changes. On opening the left ventricle its whole interior surface was red and roughened, from previous inflammation. The columnæ carnæ were unusually thick and their surfaces rough, and the shape of the cavity somewhat altered. It seemed to be contracted at the base, and enlarged, so as to appear slightly saculated, at the apex. At the base the walls were thick, but thinner than natural towards the apex. The mitral valve was extremely thickened and so changed in color and texture as to resemble the columnæ carnæ in appearance, and almost as hard as cartilage. The thickening of this valve had so narrowed the opening from the left auricle to the left ventricle that it would not admit the end of the little finger. The semi-lunar valves of the aorta were also so much thickened and indurated as to present quite a serious obstruction to the egress of blood from the ventricle. These changes fully explained the constant fulness of the pulmonary veins and the consequent capillary congestion, dyspnœa, with final pulmonary œdema and death.

Dr. T. D. Fitch presented the morbid specimens obtained from the base of the cranium and membranes of the brain, belonging to the case related to the Society at a previous meeting, and reported in the Examiner for February.

Dr. J. P. Ross related a very interesting case of extreme abdominal tympanites, ending in pneumothorax, with emphysema at the top of the chest, and death. The case was a laboring man, who had complained of some gastric symptoms, or indigestion, for one or two years, but not so severe as to prevent his regular labor, and the day previous to the attack had been at his work and as cheerful as ever. On his way home at

evening, he was attacked with severe pain in the stomach, and stopped at a drug-store, obtained a dose of cathartic pills, and took them. They did not operate, however, and, before morning, the pain in the epigastric and left hypochondriac regions became so intense as to be scarcely endurable. Dr. CLARK was called very early in the morning, and prescribed full doses of anodynes internally and fomentations externally. At that time, there was no tympanites; no febrile reaction; and the pain was still restricted to the region of the stomach. About the middle of the afternoon, however, Dr. ROSS was called in, and found the patient still in very great distress, and with an extraordinary degree of tympanitic distension of the abdomen. The pressure against the diaphragm was sufficient to render respiration very short, and the abdominal walls were, literally, as tense as a well-corded drum. On attempting to give an enema, it was found impossible to force anything into the rectum. In a few minutes after, while being turned partly upon one side, the patient felt something give way, with a sound audible to the by-standers, and in a moment the respiration became so greatly oppressed as to threaten immediate suffocation. The whole left side of the chest became almost as tympanitic as the abdomen, and an emphysematous swelling appeared in the space above the clavicle. In a few moments, the patient died, apparently from suffocation.

A strong effort was made to procure the privilege of making a *post mortem* examination, but without success. It would seem probable, from all the symptoms, that perforation of the stomach took place at the time the intense pain commenced; that the enormous accumulation of gas which was in the peritoneal sac, by its pressure, not only greatly distended the abdominal parieties and collapsed the intestines, but finally forced a passage through the diaphragm, filling the left side of the chest and following the areolar tissue of the mediastinum to the top of the chest, presenting there an emphysematous tumor above the clavicle. It was certainly an extraordinary case, and the refusal of friends to allow a proper *post mortem* examination deserves severe censure.

Death of Dr. I. P. Lynn.—At a meeting of the profession, held at the Council Chamber, Chicago, March 2d, 1866, on the occasion of the death of Dr. I. P. Lynn, Dr. R. C. Hamill was elected Chairman, and Dr. Thos. Bevan, Secretary.

On motion, Drs. Allen, Blake, and Miller were appointed a committee to draft suitable resolutions in relation to the melancholy event.

Dr. E. Ingalls made a brief address, eulogistic of the estimable qualities of our departed confrére.

Dr. J. A. Allen, from the Committee on Resolutions, reported as follows:—

Resolved, That the intelligence of the sudden and untimely death of our late friend and co-worker in the medical profession, Isaiah P. Lynn, M.D., is received by this meeting with emotions of profound pain and sincere sorrow.

Resolved, That the memory of our deceased brother will be cherished by us as of one who, personally, and by his amiable disposition and fine friendly feeling, endeared himself to all who knew him intimately; whilst, by his conscientious earnestness in acquainting himself with the principles of medical science, and thorough devotedness to the welfare of those who entrusted themselves to his care as patients, he commanded the confidence, the respect, and esteem of both the profession and the public.

Resolved, That we tender to his bereaved family and friends, the assurances of our warmest sympathy in this their great affliction.

Resolved, That copies of these resolutions be presented to the relatives, the public press, and medical journals of this city for publication.

On motion, the report was accepted and adopted unanimously.

On motion of Dr. Hay, it was resolved that the profession attend the funeral in a body.

Dr. J. A. Allen then occupied the meeting with appropriate remarks, highly creditable to the amiable character, kindness, and faithfulness of the lamented dead. He also referred to the peculiarly sad circumstances of the immediate cause of death, giving an entirely satisfactory explanation of the accident which had resulted so unfavorably.

Dr. V. L. Hurlbut followed Dr. Allen in a similar vein.

Drs. Brooks and McVickar referred feelingly to the courtesy and worth of the deceased, Dr. M. giving some incidents of his personal relations to the Doctor, of a very pleasant character.

Drs. N. S. Davis, S. Wickersham, and D. L. Miller also addressed the meeting, expressing their cordial endorsement of the resolutions, and of the sentiments of sympathy and respect which had been expressed by other speakers.

On motion, the meeting adjourned.

THOS. BEVAN, M.D., *Sec'y.*

Chicago Medical Journal.—This medical periodical has changed hands, editorially, and at the same time improved its typographical appearance. We wish its new editors much enjoyment in their editorial labors and abundant success.

AMERICAN MEDICAL ASSOCIATION.

The Seventeenth Annual Session will be held in the City of Baltimore, on Tuesday, May 1, 1866.

The following Committees are expected to report:—

On Prize Essays, Dr. Austin Flint, Sr., N.Y., Chairman.

On Quarantine, Dr. Wilson Jewell, Pa., Chairman.

On So-called Spotted Fever, Dr. Jas. J. Levick, Pa., Ch'n.

On Ligature of the Subclavian Artery, Dr. Willard Parker, N.Y., Chairman.

On Tracheotomy in Membranous Croup, Dr. Alex. N. Dougherty, N.J., Chairman.

On Rank of Medical Corps in the Army, Dr. C. S. Tripler, U.S.A., Chairman.

On Rank of Medical Corps in the Navy, Dr. T. L. Smith, N.Y., Chairman.

On Medical Literature, Dr. C. A. Lee, N.Y., Chairman.

On Medical Education, Dr. Samuel D. Gross, Pa., Chairman.

On American Necrology, Dr. C. C. Cox, Md., Chairman.

On Patent Rights and Medical Men, Dr. David Prince, Ill., Chairman.

On Alcohol and its Relations to Man, Dr. Gerard E. Morgan, Md., Chairman.

On Insanity, Dr. Alfred Hitchcock, Mass., Chairman.

On Milk Sickness, Dr. Robert Thompson, Ohio, Chairman.

On the Relation which the Doctrine of the Correlation and

Conservation of Forces bears to the Physiological and Pathological Condition of the Human System, Dr. S. L. Loomis, D.C., Chairman.

On the Progress of Medical Science, Dr. Jerome Candee Smith, N.Y., Chairman.

On Diphtheria, Dr. H. D. Holton, Vt., Chairman.

On the Comparative Value of Life in City and Country, Dr. Edw. Jarvis, Mass., Chairman.

On Drainage and Sewerage of Cities in their Influence on Health, Dr. Wilson Jewell, Pa., Chairman.

What Effect has Civilization on the Duration of Human Life, Dr. Augustus A. Gould, Mass., Chairman.

On Disinfectants, Dr. E. M. Hunt, N.J., Chairman

On Compulsory Vaccination, Dr. A. Nelson Bell, N.Y., Ch'n.

On Strangulated Hernia, Dr. W. F. Peck, Iowa, Chairman.

On the Causes and Pathology of Pyæmia, Dr. J. J. Woodward, U.S.A., Chairman.

On the Use of Plaster of Paris in Surgery, Dr. Jas. L. Little, N.Y., Chairman.

On the Etiological and Pathological Relations of Epidemic Erysipelas, Spotted Fever, Diphtheria, and Scarlatina, Dr. N. S. Davis, Ill., Chairman.

On Meteorology, Medical Topography, and Epidemics, Drs. J. C. Weston, Me.; P. A. Stackpole, N.H.; C. L. Allen, Vt.; A. C. Garratt, Mass.; C. W. Parsons, R.I.; B. H. Catlin, Ct.; E. M. Chapman, N.Y.; E. M. Hunt, N.J.; D. Francis Condie, Pa.; T. Antisell, D.C.; O. S. Mahon, Md.; T. M. Logan, Cal.; R. C. Hamill, Ill.; J. W. H. Baker, Iowa; Abm. Sager, Mich.; J. W. Russell, Ohio.

WM. B. ATKINSON.
Permanent Secretary, Philadelphia.

Increased Use of Stimulants in the London Hospitals.—Some remarkable statistics, regarding the employment of stimulants and the mortality in the London Hospital during some past years, appear in the last volume of the *Reports* of that hospital. In 1862, the number of in-patients was 4519, and the general mortality 7.6 per cent. The quantity of stimulants consumed was 1281 gallons of wine, 162 gallons of brandy, 38 gallons of gin, and 1100 ounces of cinchonine.

In 1864, the number of patients was 4619, and the general mortality 10.5 per cent; the stimulants consumed by these being 1558 gallons of wine, 359 gallons of brandy, and 77 gallons of gin. But as a set-off, if it may so be called, 760 more leeches were employed during this year than the average for

the five preceding years, viz.: 3840. However, here we have a great increase in the amount of stimulants consumed, and also a great increase in the mortality of 1864, as compared with that of 1862. We state the facts, let it be understood, without in any way pretending to connect them as cause and effect.

Other statistics, Dr. Fraser gives us under this head:—"From 1854 to 1858, the annual average quantity of wine employed by each physician was 12,803 ounces;" each physician having an annual average of 391 patients under treatment. The annual average mortality was 11.87 per cent. But from 1860 to 1864, the annual average quantity of wine employed by each physician was nearly quadrupled, being 48,136 ounces; his annual average number of patients was 413; and the annual average mortality was 12.65 per cent.

From 1854 to 1858, each surgeon employed annually 38,016 ounces of wine; his annual number of patients was 1036; and the annual average mortality 4.48 per cent.

From 1860 to 1864 (five years,) each surgeon employed an annual average of 142,951 ounces of wine (nearly four times more than in the previous years;) the annual number of patients under him was 1065; and the annual average mortality 6.65 per cent.

Hence, we have, in the practice of both physicians and surgeons, a distinct increase of mortality coincident with great increase in consumption of stimulants.

Dr. Fraser also tells us (referring to a former paper of his) that, in 1851, there were 4051 in-patients in the London Hospital; that in 1857, there were 3935 in-patients; and that the mortality was greater in 1857 as 8 to 6.5 per cent, although £962 more were spent in 1857 than in 1851 for articles of luxury.

It is curious to note, that the only comment which Dr. Fraser makes on the above remarkable statistics is this:—

"It is evident, that a steady rise in the employment of stimulants------is still going on; and whatever be the cause, we may rest assured that the practice is imperative and needful; for it would be a monstrous assumption that a whole staff could be blindly following an objectless routine."

Not a single word of comment does Dr. Fraser bestow on the constant fact of the coincident increase of the mortality!

The summary of these statistics stands thus:—

From 1854 to 1858, each physician employed 12,800 ounces of wine annually; the deaths being 11.88 per cent. From 1860 to 1865, he employed 48,136 ounces; the deaths being 12.65 per cent.

During 1854 to 1858, each surgeon employed annually 38,016 ounces of wine; the deaths being 4.48 per cent. During 1860 to 1864, he employed annually 142,951 ounces; the deaths being 6.65 per cent.

In 1862, the general mortality of the hospital was 7.4 per cent; the consumption of stimulants being 1281 gallons of wine, 162 of brandy, and 38 of gin.

In 1864, the mortality was 10.5 per cent; the quantity of stimulants consumed being 6558 gallons of wine, 359 of brandy, and 12 of gin.

We again repeat, well knowing the sad fallacies which are so often edited through an erroneous interpretation of statistics, that we do not pretend to connect the increase of deaths with the increase of stimulants consumed. But, when we reflect upon our modern advancement in medicine and surgery (especially as miscalled conservative,) when we think of our great modern hygienic efforts, we may fairly ask for some explanation of the fact of a general advance in the mortality of a London Hospital.—*Brit. Med. Jour.*, Dec. 9, 1865, *and Medical News.*

Vaccine Matter from the Cow.—M. Lanoix has read a paper on this subject before the Academy of Medicine at Paris. This physician, after studying the subject at Naples, is founding in the capital of France an establishment for such vaccination. In the paper it is stated that out of 820 revaccinations practised in different schools upon children from 7 to 13 years old 21 per cent. succeeded. The figures respecting a more advanced age are as follows:—From 14 to 20 years, 71 revaccinations, 31 effectual; from 30 to 40 years, 200 revaccinations, 97 effectual; from 40 to 55 years, 30 revaccinations, 7 effectual; from 50 to 60 years, 5 revaccinations, 2 effectual. The author considers that the transmission of vaccine matter from heifer to heifer is always possible, the quantity obtained being quite adequate to very numerous operations; that the matter does not lose in activity in passing through animals as it does in passing through human organisms; that vaccinations are always or almost always successful; the revaccination with animal matter succeed more frequently than with matter obtained from human beings; that vaccination with heifer matter is extremely easy; and that such vaccinations are highly useful in epidemics of small-pox, as larger supplies of vaccine matter may rapidly sent to extensive tracts of country.—*London Lancet.*

BERKSHIRE MEDICAL COLLEGE.

THE FORTY-FOURTH ANNUAL COURSE OF LECTURES IN THIS Institution will commence on THURSDAY, JUNE 14TH, 1866, and continue eighteen weeks.

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WM. C. RICHARDS, A.M., M.D., Professor of Chemistry and Natural History.

HORATIO R. STORER, A.M., M.D., Professor of Obstetrics and Diseases of Women.

A. B. PALMER, A.M., M.D., Acting Professor of Materia Medica and Therapeutics.

HORATIO R. STORER, A.M., M.D., Acting Professor of Medical Jurisprudence.

FRANK K. PADDOCK, M.D., Demonstrator of Anatomy and Prosector of Surgery.

By the recent action of the Officers of the College, two weeks have been added to the Course, making it now eighteen weeks in length; and it will hereafter commence on the Thursday nearest the middle of June, instead of the first Thursday in August, as heretofore; thus giving time for a *full* Summer Course, without interfering with the Winter or Spring terms of other Schools.

It is intended that the Course of Instruction in each Department shall be *eminently* thorough.

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Pittsfield, Mass., Feb. 17, 1866.

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THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., Editor.

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Original Contributions.

ARTICLE XIII.

THE PATHOLOGY AND TREATMENT OF EPIDEMIC CHOLERA.

By N. S. DAVIS, M.D., Prof. Practical and Clinical Medicine, Chicago Medical College.

In compliance with the wishes of some profcssional friends, I have written the substance of the remarks made by me in opening the discussion on the pathology and treatment of epidemic cholera, in the Chicago Medical Society, at a recent meeting. They were as follows:—

Owing to the very brief time allowed to each member of the Seciety in our discussions, I shall, on this occasion, make no remarks in regard to the causes of cholera, but simply assume that an efficient cause does exist, whether in the form of a specific poison, or in some peculiar combination of atmospheric conditions. Neither shall I spend any time in rehearsing the various theories that have been proposed, in relation to the nature of the disease; but, having had ample opportunities to study its phenomena and results, during five epidemics, I shall simply give the conclusions at which I had arrived.

In studying the phenomena or symptoms of cholera closely, from its initial disturbances to the complete collapse and death, we find, throughout, unmistakable evidence of a diminution of

vital affinity, an impairment of sensibility in the excito-vascular nervous system, and increased susceptibility of the mucous membrane of the digestive organs. By vital affinity I mean that property inherent in all living organized tissues, which causes those atomic changes by which nutrition, disintegration, and secretion are effected and caloric evolved. This property not only regulates or determines the selection and appropriation of new organic atoms or cells constituting nutrition; the rejection of old atoms constituting disintegration; and the selection and combination of atoms or elements by the secreting cells, constituting secretion; but in the regulation of these functions it necessarily regulates the evolution of caloric and the *tonicity* of the tissues. It is independent of all mere nervous function or influence, and is capable of being increased, dimin ished, or perverted by the action of exterior influences, both healthful and morbific.

By the *excito-vascular* nervous system, is meant that part of the ganglionic or organic nervous system which follows the bloodvessels and supplies their coats with nerve influence. Some of these filaments are sensitive and are distributed to the interior lining of the capillary vessels, while others are motor and supply the muscular fibres entering into the composition of the capillary walls, and they bear the same functional relation to each other as the cerebro-spinal nerves of sensation and motion do. Thus, each impulse of blood from the heart into the capillaries makes an impression on the sensitive branches of the excito-vascular nerves and calls forth a reflex influence upon the muscular fibres of the capillary vessels, inducing sufficient contraction to make these minute vessels active instead of passive agents in carrying on the circulation. The word capillary is here used in its ordinary sense and includes both the arterioles and the *true* capillaries of KOLLIKER and FLINT. As the atomic and cell changes which constitute nutrition, disintegration, secretion, and calorification depend directly upon the coöperation of a proper degree of vital affinity with a regular and healthful capillary circulation, whatever is capable of impairing the former or disturbing the latter will necessarily dis-

turb, more or less, all the functions named. In my estimation, the cause or causes of cholera directly produce a decided diminution of vital affinity and a diminished sensibility of the arterioles or systemic arterial capillaries throughout the whole system, while the susceptibility or irritability of the mucous membranes is increased. This gives rise, first, to general diminution of tonicity, indicated by lassitude and muscular weakness; to feebleness of capillary circulation, indicated by paleness and coolness of skin, softness of pulse, and diminished glandular secretion; and to unnatural disturbance of the alimentary canal, in which the increased excitability and impaired tonicity leads to ready serous effusion and consequently liquid evacuations from the bowels. These constitute the essential phenomena of cholerine or the forming stage of active cholera. The pathological conditions, thus started, increase with a rapidity proportionate to the intensity of the action of the causes and the previous condition of the patient. In ordinary epidemic cases, a few hours is often sufficient to bring the relation between the vital affinity of the tissues and the movement of the blood in the capillaries to such a condition that all the nutritive and natural secretory action is stopped, the pulse is rapidly sinking, and all the tissues becoming cold, while the serous effusion from the mucous surfaces and skin is rapidly exhausting the water and salts of the blood, and so disturbing the circulation in the cerebro-spinal nervous centres as to cause the induction of irregular muscular spasms or cramps in any or all of the voluntary muscles. This constitutes the active stage of severe cholera.

During this stage, another pathological element comes up for consideration, namely, the rapid change in the fluidity of the blood, from the loss of the water and salts. This change adds still more to the embarrassment of capillary circulation and hastens the period of collapse, when the pulse ceases in the extremities, the tissues become shrunken and cold, the skin corrugated and bluish, the sphincters relaxed, and the mind torpid or inactive. It is in this stage that a large majority of the deaths take place; though when the cause or causes of an epidemic are acting in their highest degree of intensity vital affinity and

capillary sensibility may be so directly and fully suspended that all organic changes cease almost immediately, the patient becomes rapidly cold, blue or leaden color, pulseless, and dies with but little evacuations either by vomiting or purging.

With these views, in regard to the pathology of cholera, we have no difficulty in deducing certain rational indications for treatment. These indications are, to adopt such measures as will increase vital affinity and especially increase the sensibility and tonicity of the systemic capillaries; to allay the morbid irritability of the mucous membranes; to retard or suppress the discharge of the serum and salts of the blood through the mucous membranes and skin; and, at the proper stage of the disease, to supply, as directly and rapidly as possible, the materials lost from the blood in the excessive discharges. If the first two indications named could be fully met in the early stage of the disease, it would render the two latter unnecessary. But, unfortunately, so rapid is the progress of many cases of cholera, that they are not brought under the care of the physician until the first stage is already past, and the conditions on which all the above indications are founded are fully developed.

In the limited time allowed in this discussion, I cannot enter upon a general consideration of the various means or remedies that may be more or less useful in the accomplishment of the objects named, but will simply indicate those I deem most efficient:—

For increasing vital affinity and the sensibility of the systemic capillaries, and, thereby, sustaining capillary circulation, secretion, organic changes, and evolution of caloric I should have great confidence in the inhalation of oxygen gas as the most direct and efficient natural stimulant or excitor with which we are acquainted, if it could be at the command of the practitioner and its administration properly regulated. As a substitute, I would suggest that a fair trial be made with the nitrous-oxide gas.

Aside from these two gases, the well-known properties of strychnia in increasing nerve sensibility and muscular tonicity suggest it as a remedy of value; and there is on record much reliable clinical evidence in its favor.

To allay the morbid irritability of the mucous surfaces, the preparations of opium are almost universally acknowledged to be most efficient; and, when combined with astringents and alteratives, they also afford the most efficient known means for retarding or arresting the serous effusions from the mucous lining of the stomach and bowels.

My own practice, when called to a case of cholera in the early part of the active stage, when the rapid vomiting, purging, and perhaps cramps have just fairly begun, is to direct the immediate application of strong mustard sinapisms over the epigastrium and nearly the whole length of the spine; keep the patient in a horizontal position, with dry warmth to the extremities; and give internally, every half-hour, the twentieth of a grain of strychnia with 10 drops of oil of turpentine, in the form of an emulsion, with gum Arabic, sugar, and mint water. Also, *immediately* after every paroxysm of vomiting, a powder composed of sulph. morph. $\frac{1}{4}$ gr., calomel 1 gr., and acetate of lead 1 gr., mixed with a few grains of sugar and moistened with water, and followed by a piece of ice instead of drink. I mean to be understood literally, when I say *immediately after* every paroxysm of vomiting, for the stomach cannot maintain a continuous effort to eject its contents. Hence, if the powder is swallowed immediately after the contractile power of the stomach has been exhausted by a paroxysm of vomiting, a little time will elapse before another paroxysm can take place, during which the morphia gains some impression on the nerves, and the calomel and lead on the capillaries, of the mucous membrane. Whereas, if you wait, as almost all patients and nurses will desire to do after each act of vomiting, until the patient has "rested a few minutes," or the "stomach has settled a little," you delay exactly long enough for the muscular coat of the stomach to regain its contractility and its cavity to have gathered a fresh accumulation of effused serum, and then if you give the powder, or anything else, in nine trials out of ten, it will be immediately rejected and its effects lost.

At the same time that I direct the foregoing remedies by the mouth, in the exact manner stated, I direct $\frac{1}{2}$ grain of sulphate

of morphine and 10 grains of acetate of lead, dissolved in 2 or 3 ounces of cold water, to be injected into the rectum *immediately* after each evacuation from the bowels. When the serous discharges have continued until the water and salts of the blood are so much exhausted as to materially increase the viscidity of that fluid, I then endeavor to replenish the lost materials, and also aid the strychnia in maintaining nerve sensibility, by giving, alternately, every 15 or 20 minutes, a tablespoonful of strong infusion of coffee or tea and animal broth well salted with chloride of sodium or chlorate of potassa.

If the stage of true and full collapse finally ensues, the chances of recovery will be extremely small, but they will be best promoted by withdrawing all remedies but the strychnine, caffein, or nitrous-oxide gas, and the patient, judicious use of animal broth well salted, and dry external warmth.

If, either before or after collapse, febrile reaction comes on, and a low grade of secondary fever is established, it must be treated on the same principles as the lower grades of typhoid or enteric fever. I have thus briefly stated the treatment in which I was induced to place much confidence during an active and somewhat extensive experience in five successive cholera epidemics. I am satisfied that all alcoholic stimulants and what are called *heroic* doses of medicine, of any kind, are injudicious and generally hurtful, in the treatment of this much-dreaded disease.

ARTICLE XIV.

BLOOD-LETTING IN SYMPTOMATIC FEVERS.

By S. R. MILLARD, M.D., Aurora, Ill.

Read to the Aurora Medical Society.

By the term symptomatic fever, I mean, of course, fever depending for its origin on some acute inflammation.

Let us now look at this matter of substitution. In the first place, there is no such thing in nature, strictly speaking, as substitution. All things have their legitimate spheres and spe-

cific influences. The idea of exact substitution involves the absurdity of the existence of some things which can, without loss or injury, be dispensed with—an unnecessary creation. Wherever one thing absolutely supplies the place of another, it will be found that these seemingly different things are really identical.

To examine properly the nature and powers of substitutes for blood-letting in acute inflammations, let us consider common pneumonia, with or without pleuritis, and as a sample of the characteristics of inflammation and of the influence of blood-letting upon it. I do not propose to describe the disease, nor its treatment, in detail. I shall speak only to the points I raise. I choose pneumonia, because it is the disease in which veratrum viride is supposed to be particularly efficacious as a substitute for venesection. In all acute inflammatory affections, the powers of the system are elevated, as a general principle, above the natural standard. The exception is, when some vital part, as the delicate and highly complicated mucous membrane, is inflamed, and then the disease has a tendency to depression; on the principle of an extensive injury to the fibrils of the nervous system. But I will not dwell upon exceptions. In pneumonia—an affection of parenchymatous structure—this injurious shock does not obtain; the powers and resiliency of the system are elevated; there is active congestion of a large portion of the lung. This is necessarily attended by a withdrawal of that portion of the lung from its duty in assisting the proper aëration of the blood, so that, while in health, the entire lungs are called into action to perform the function of respiration upon the blood in its natural circulation, and in a healthy condition. In pneumonia, a portion of the lung is quiescent and useless, while the circulation is greatly increased. This produces head symptoms, and, in addition, a poisonous state of the blood, such as acts upon the nervous sensibilities in a way inimical to the healthy action of remedies, not to mention the proper action of the secretory functions.

What does blood-letting effect in a condition of this kind? I will look at its effects *seriatim*, and we will see how it is that

any internal remedy cannot possibly occupy the position of a "substitute for blood-letting:—"

1st. The abstraction of blood restores the equilibrium between the amount of blood in circulation and the air respired, which had been impaired by the inactivity of a portion of the lungs, by reducing the amount of the circulating medium. It also relieves by restoring the just relationship between the circulation and respiration, the oppression of the nervous system, depending upon unaërated or badly aërated blood circulating in the arterial capillaries. In this way it awakens the natural sensibilities of the system, thus promoting the effects of other remedies.

Will veratrum or digitalis as effectually restore this equilibrium? Veratrum is powerless in fulfilling this important indication—an indication that should never be overlooked in any serious case of pneumonia. I will not dwell upon the bad complications that are liable to ensue if it is neglected.

2d. Does not every physician know that venesection is infinitely the most powerful measure that can be employed in promoting absorption?

I have heard it contended that pneumonia is to be got rid of by expectoration. Loosening the cough is not intended to enable the patient to spit up the disease; it matters little whether veratrum renders expectoration easy or not, if it will do no more as a substitute for bleeding in the disease under consideration. Proper venesection will also loosen the cough; but instead of making expectoration copious, it diminishes its quantity. It does this by so emptying the bloodvessels and relieving the oppressed powers of the nervous system, that the accumulated matter (the blood and lymph congesting the lungs) reënters the circulation, back again, the same way it came out of it; and thus the oppression of the lungs is relieved, the necessity of copious expectoration fades away, and the affected part speedily begins to resume, if proper adjuvant treatment is employed, its wonted functions.

Will veratrum thus fill the place of blood-letting in removing the inflammation and congestion of pneumonia? The pretension is perfectly inconsistent.

3d. In symptomatic fevers, bleeding promotes the operation of medicines. Critical discharges are more readily and freely brought about, either in the form of evacuations from the bowels, or of the secretions of the kidneys or skin, subsequently to venesection, than they are before it has been resorted to. This especially obtains in pneumonia, in consequence of the absorption of medicines being promoted by the remedy, and because the nervous system is not merely relieved temporarily from the influence of fever, but because, also, it is permanently relieved from the poisonous oppression of unaërated blood—a relief that, in the nature of things, veratrum is inadequate so fully to afford.

I am not disposed to deny to veratrum certain useful properties in the treatment of inflammation; but that it is ever a substitute for blood-letting, I most emphatically deny. In severe cases of pneumonia we have more blood than we want. It is in our way, and in the way of convalescence. We want to get rid of it, and if there is any boon we should thank Providence for, in such circumstances, it is the knowledge and experience which directs blood-letting.

ARTICLE XIV.

SEVERE AFFECTION OF AN EYE, RESULTING FROM A DISEASED TOOTH.

REPORTED BY JOS. S. HILDRETH, M.D., late Surgeon in charge of the U.S. Army Eye and Ear Hospital, Chicago.

On the 9th of last month, I was called by Dr. Lilly, of this city, to treat Mary ———, age 12 years.

Her condition was as follows:—The globe of the left eye, quite immovable by the recti muscles, was forced upwards. The upper lid covered about five-eighths of the cornea, the lower was forced downward and outward. The inferior conjunctival "cul de sac" was inverted and projecting from the commissure of the lids. The cornea was ulcerating at its lower periphery; but this membrane was not anæsthetized. The pupil had

become dilated and fixed. The second superior temporary molar of that side was carious and loose; the gum ulcerating and the cheek swollen. Tenderness existed along the inferior border of the orbit, especially near the foramen, and extended into the canine fossa, where it was more marked. Great pain in and about the orbit, but little from the teeth. Pressure with the finger on the inner and lower margin of the orbit produced pain in the tooth; and pressure on the affected tooth augmented the pain in the orbit. Vision with this eye so affected as not to be able to count the fingers at any distance.

This condition of the patient commenced ten days before, by pain in the tooth. On the third day the eye first began to be affected, which condition continued to increase in gravity until the date above given. The pain arising from the tooth was followed in a few days by gumboils, which soon opened; and after which the pain in these parts ceased.

Such in brief is the history of this interesting case.

It is evident there was periosteal inflammation, involving the margin and a portion of the floor of the orbit, formed by the maxillary, extending to the canine fossa and alveolar process; with, probably, necrosis of the latter.

The offending tooth was extracted. Its palatine fang was short and thin; the outer larger but also thin. A free opening was made between the cheek and canine fossa, extending three-fourths of an inch upward from the margin of the alveolus. The probe detected a slight necrosis of that process only. The bicuspid could readily be felt in its proper position.

Pressure by means of picked lint, and a bandage around the head was so applied to the contents of the orbit as to gently force the eye downward and backward. One grain of muriate of ammonia was ordered every hour, and morphine at night, sufficient to procure sleep.

The pain in the orbit was, to a great extent, relieved by the pressure, and on the fifth day, the condition of these parts had so much improved that it was discontinued. On the tenth day the muriate of ammonia was also dropped.

The patient improved daily, except a certain degree of ten-

derness near the infraorbital foramen, which eventually became the seat of an abscess. It was opened Jan. 5th, since which this complication has gradually disappeared.

March 3d. Vision excellent, accommodation perfect, movement of globe good, except downwards, which is gradually improving. A certain amount of periosteal inflammation of the floor of the orbit still remains, but this continues to abate.

The above case fully illustrates the necessity of giving proper attention to certain affections of the teeth, as a means of avoiding, if not in all cases as serious as this one, many, and often important, affections of the eye.

The number of diseases of the eye, arising from "*dental causes*," whose name is legion, is unquestionably much greater than many oculists or dentists are aware of.

Let us hope this subject may receive the earnest attention of all true laborers in dental and ophthalmic surgery.

My acknowledgements are due W. W. Allport, D.D.S., for counsel in the above case.

Chicago, March 8th, 1866.

Proceedings of Societies.

PROCEEDINGS OF QUINCY MEDICAL SOCIETY.

The semi-annual meeting of the Quincy Medical Society was held at the office of Dr. C. A. W. Zimmermann, on the 14th day of November, 1865, at 10 o'clock A.M., Dr. Zimmermann being in the chair.

The following members were present:—Drs. C. A. W. Zimmermann, J. H. Reynolds, E. Hoffman, Wm. Zimmermann, and A. Niles.

Dr. A. J. Miller, being present, was proposed as a candidate for membership, and having complied with the conditions prescribed in the constitution and by-laws, was, by a unanimous vote, admitted as a member.

Dr. Reynolds opened the discussion on spotted fever, and proceeded to detail his observations and experience in the disease. He likewise remarked at length upon its history, pathology, diagnosis, and treatment, but as Dr. R. and other parties to this discussion have not furnished us copies of their remarks, as was expected, we are unable to give them in detail.

On motion, the medical gentlemen present were invited to participate in the discussion, which was continued by Dr. Miller, who spoke upon the cause and pathology of the disease, and made some judicious observations upon its treatment. Dr. Wm. Zimmermann likewise remarked briefly upon the subject. The President closed the discussion with some pertinent observations, giving the latest and most approved opinions of German practitioners upon the pathology and diagnosis of spotted fever.

The Society then adjourned, to meet at 1 o'clock P.M.

The Society convened, pursuant to adjournment, at 1 o'clock P.M., and proceeded to elect a delegate to attend the next meeting of the American Medical Association.

On motion, Dr. Wm. Zimmermann was unanimously elected delegate.

Drs. E. Hoffman, J. H. Reynolds, and C. A. W. Zimmermann were unanimously elected delegates to the State Society, and Drs. G. H. Long, J. T. Fugal, and A. J. Miller substitutes.

The Treasurer reported three dollars in his hands; and the Secretary presented a bill of indebtedness of the Society, amounting to six dollars. This sum was raised by contribution and the debt discharged, leaving in the treasury a balance of three dollars.

On motion, a committee was appointed to present a report of the diseases prevailing in Adams County and its vicinity the present year. The President appointed Drs. Niles, Hoffmann, Reynolds, and A. C. Baker.

The President proposed albuminuria and uræmia as the subjects for discussion at the next meeting. On motion, the President was appointed to lead in the discussion.

Dr. Reynolds read a report of a case of suppuration occurring in the prostate gland of an aged patient, terminating in recevery.

The Secretary reported the case of Michael Clark, aged 13 years, a patient of Dr. L. H. Baker, of this city, whom he visited in consultation with Dr. F. K. Bailey and the attending surgeon, Sept. 8th, 1865. The patient was thrown from a horse about 9 o'clock A.M., causing a compound dislocation of the elbow-joint; the articular extremity of the humerus was thrust through the integuments, and likewise through the sleeve of the shirt two inches, effecting an extensive laceration of the soft parts, a complete rupture of the brachial artery, and an injury of the median nerve. The surgeons in attendance, after careful examination and reflection, and at the same time giving due weight to the adverse opinions which had previously been expressed, decided to attempt to save the arm. The patient having been brought into a state of anæsthesia, by ether, Dr. Baker reduced the dislocation at 3 o'clock P.M., six hours after the accident. The brachial artery was ligated, and three sutures introduced; an ordinary roller bandage was applied; the limb placed in a sling, with cold water dressings, and orders to maintain perfect rest and take quarter-grain doses of sulphate of morphia, repeated, if necessary, every three hours during the night.

Twenty-four hours after the accident, Dr. Baker applied a starch bandage, hoping, thereby, to prevent tumefaction. As reaction occurred, with considerable fever, the following mixture was prescribed:—

℞. Magnesiæ Sulphatis, ----------
Morphia Sulphatis,----------
Antimonii et Potassæ Tartratis,------āā gr.ij.

Mice et Signa. A tablespoonful to be taken every three hours.

A sero-sanguinolent discharge commenced to flow from the wound on the second day; on the fifth, it assumed a purulent appearance, and became more free.

The tumefaction, and consequent constriction of the joint, caused so much pain that it became necessary to remove the starch bandage on the fifth day after its application. The swelling of the joint was not excessive, and the pain was at no time severe, except when movement was attempted. The great

difficulty in the treatment consisted in keeping the joint quiet. Dr. Baker succeeded in maintaining almost perfect rest of the joint by a modification of Dr. Bond's angular splint, made of tin, with brass arms. This apparatus was applied on the 20th, twelve days after the injury. From this time, no pain was caused by dressing the arm, as the elbow was uncovered about two inches above and below the joint. From this time the case progressed favorably. The apparatus was removed on the sixth week, and a slight motion of the arm was perceptible in the direction of flexion, extension, and rotation. The treatment consisted of water dressings the first few days, and, while the constitutional disturbance continued, the saline and antimonial mixture before mentioned, with morphia when necessary to cause sleep.

The constitutional disturbance was not great, the pulse ranging from 92 to 112. The appetite was tolerably good most of the time, and, after the application of the confining apparatus, the patient was able to take daily exercise about the city.

A small collection of pus on the outer aspect of the joint required puncturing, which was done on the 24th of September. On the 11th of November, the ligature of the artery was removed. Since the date of this report, two small pieces of exfoliated bone passed from the orifices about the joint. On the 25th of January, the last orifice closed. The patient can move the arm about two inches in the direction of flexion and extension; the rotary motion is more limited; the ability to move the arm is increasing; and it is probable that its usefulness will, to a great extent, be preserved.

The Secretary likewise reported the following cases, which occurred in his own practice:—

Case I. Oct. 4th, 1865, at 11 o'clock A.M., was called to visit Mrs. B., aged 30 years, and found her suffering from excruciating pain in the abdomen, causing her to make an outcry which was heard before entering the house. She had, likewise, a rapid and laborious respiration, with no febrile action. At 9 A.M., she commencee using a vaginal injection composed of one tablespoonful of alum dissolved in one pint of water.

The pain began as the fluid first passed from the syringe, and continued without mitigation. Injected, hypodermically, one-third of a grain of morphia dissolved in one-third of a drachm of water; this, in ten minutes, mitigated the pain and diminished the outcry. In one hour another third was injected, which still further relieved the pain. In one hour after, one-fourth of a grain of morphia was administered internally, and directions given to repeat the dose in an hour or two, if necessary. But, notwithstanding these repeated doses, the pain continued twenty-four hours before it subsided. The patient was directed to keep the bed, and give information if the pain returned.

Oct. 8th.—Was called to visit her again, and found her suffering from inflammation of the uterus. The pain returned two days since, but not being so severe as before, she did not think it necessary to inform her medical attendant. The inflammation yielded in a few days to the application of leeches to the uterus, and suitable doses of morphia to allay the pain.

On a subsequent examination, found the cavity of the uterus to measure, by the sound, three and one-half inches, and the os to be quite open. Her health has not been good since the birth of her last child, now some four years old, and she suffers from pain in the back, side, and lower part of the abdomen, and has leucorrhœa. The uterus is in a state of sub-involution, not having returned to its normal condition since her last confinement. The patent condition of the os explains the ready passage of the fluid into the uterus—the nozzle of the syringe probably entered it. Our female syringes would be safer if the nozzle was made larger, with orifices only in the side of it, to guard against such an accident.

Case II. Oct. 29th, 1865, was called to visit Mrs. C., aged 34. She has not menstruated since June 25th, 1865. About six weeks since, she commenced flowing, which has continued to the present time, with the exception of short intervals. The hemorrhage has, at times, been very profuse for a few hours, then diminishing. She had previously consulted two practitioners, the last of whom decided that she was pregnant, and

advised her to submit to no further treatment. Anxious on account of her great losses of blood, and debility, she desired further advice. She is quite anæmic, but her appetite for food is good. Four months have elapsed since her menstruation ceased. She has none of the ordinary symptoms of pregnancy, excepting an interruption of the catamenia and an enlargement of the uterus. The mamma is flaccid, and almost in a state of senile atrophy. No change has occurred either in the color of the areola about the nipples, or in the follicles. The fundus of the uterus is felt midway between the pubis and umbilicus. On vaginal examination, the cervix was found retroverted and harder than usual in pregnancy; the os was somewhat open. The uterus was hard, and in attempting to practise ballotement no evidence of a fœtus could be obtained. My impression was, that there was no living fœtus in the uterus, but, as the patient's condition was critical, and a correct diagnosis a matter of great importance, a consultation was decided upon, and Dr. L. H. Baker was called, when an examination by the stethescope and by the speculum was instituted, the results of which served to confirm the opinion previously entertained. It appearing evident that the life of the patient could not be saved without the removal of the cause of the flooding, an elastic catheter was passed through the os, the distance of four and one-half inches. No serous fluid passed, but blood flowed freely through the catheter. A sponge tent was then introduced into the os, for the purpose of dilating it, in order to ascertain the nature of the uterine tumor. The tent passed into the os with some difficulty, which being overcome, it suddenly went out of sight.

October 30th, 2 o'clock P.M.—Patient has had no flooding since the tent was introduced; it has not passed away, and cannot be found in the vagina. The os was then brought to view with the speculum, and a larger tent introduced.

12 o'clock P.M.—Was called up and requested to visit the patient on account of the severe flooding. On examination, both tents were found in the vagina. The first one had probably found its way into the uterus and penetrated the fibrinous cyst it contained, and was at length expelled by exciting uter-

ine contraction. I at once introduced the tampon, to control the flooding.

Oct. 31, 9 o'clock A.M.—The hemorrhage not entirely stopped. Removed the tampon and introduced a new one. The os more dilated. Prescribed a powder of five grains of ergot, to be repeated every two hours.

4 o'clock P.M.—Removed the tampon and found a fibrinous body in the os. The patient had had active pains since taking the powders; these had become so severe that I suspended them, and replaced the tampon.

9 o'clock P.M.—Was sent for again, on account of severe pain. Removed the tampon and placed a new one. Found the tumor descending. Prescribed fifteen drops of tincture of opium in order to give the patient an opportunity to sleep, and directed the ergot to be given again in the morning.

Nov. 1st, 9 o'clock A.M.—The patient rested some last night. The hemorrhage not entirely ceased. Removed the tampon and found a fleshy mass in the vagina, which, by the partial introduction of the hand, was removed. It was pear-shaped, and evidently filled the whole cavity of the uterus. The patient was directed to keep the bed for ten days, and continue the ergot, if necessary, to check the flowing.

This mole was presented to the Society for inspection. It weighs eight troy ounces, and measures four and one-half inches in length, and two and three-fourths of an inch in breadth. The walls of the mole are three-fourths of an inch thick. It has a central cavity containing a fœtus five lines in length and two and one-half in breadth. The umbilical cord is two and one-half lines in length, and is attached to a small body, probably the placenta, which is consolidated with the walls of the cyst, which are, no doubt, an abnormal development of the membranes enclosing the fœtus. The growth of the fœtus must have ceased about the thirtieth day.

Nov. 2d.—The patient has no unusual discharge, and appears quite comfortable. Prescribed one drachm of sulphite of soda, to be taken three times a day, dissolved in water.

Nov. 12th.—No unfavorable symptoms have occurred; the

appetite is good, and the strength improving, and no further treatment deemed necessary.

The Secretary, who was appointed essayist at the annual meeting, then occupied one hour in reading a paper on erysipelas. The leading idea maintained and illustrated was, that erysipelas is a blood disease, not necessarily manifesting itself on the skin, but liable to locate internally, and attack simultaneously, or consecutively, various structures of the body.

On motion, the Secretary was directed to prepare for publication an abstract of the proceedings of this meeting for our city papers, and a full report, with all the papers read, for the Chicago Medical Examiner.

On motion, the Society adjourned, to meet in this place on the third Tuesday in May next, at 10 o'clock A.M.

The meeting was believed to be successful in furthering the objects of the Society, the advancement of medical science, and the promotion of harmony and good-will in the profession.

The members, evidently, separated with mutual cordiality and a determination to labor with increased assiduity in the cause of science and humanity.

ADDISON NILES, *Secretary.*

PROCEEDINGS OF A MEETING OF THE COUNTY MEDICAL SOCIETIES OF NORTHERN INDIANA.

City of Kokomo, Feb. 27, 1866.

According to previous arrangement, a number of physicians, members of the different county medical societies of Northern Indiana, met in the City of Kokomo, at 10 o'clock A.M., for the purpose of taking into consideration the propriety of a more thorough organization of the medical profession.

On motion, Dr. C. Richmond, of Howard Co., was chosen President, and Dr. N. W. Black, of Delaware Co., Secretary.

The following physicians presented their credentials as delegates:—Drs. L. B. Harvey and L. D. Waterman, of Marion Co.; Wm. Lomax and H. Charles, of Grant Co.; R. Winton

and N. W. Black, of Delaware Co.; C. Richmond, L. Kern, and Wm. Scott, of Howard Co.; and M. M. Jones, of Tipton Co.

Dr. Wm. Lomax then stated the object of the meeting in a clear and impressive manner.

The Society was then entertained by very interesting remarks from Drs. L. B. Harvey and L. D. Waterman.

On motion, the Society then adjourned, to meet at 2 o'clock P.M.

2 P.M.—Society met, according to adjournment.

The President called the house to order, and the minutes of the previous session were read and approved.

The following members of the profession were admitted as delegates:—Drs. G. Lyons, J. E. Lyons, and R. A. Curran, of Huntington Co.; R. S. Blount, W. R. Winton, and J. L. Dicken, of Wabash Co.

On motion of Dr. R. A. Curran, a committee composed of one member from each county represented, was appointed to draft an address to the physicians of the State, urging the necessity of a more thorough organization of the medical profession.

The President then appointed the following members such committee:—Drs. Wm. Lomax, J. L. Dicken, R. Winton, R. A. Curran, L. B. Harvey, M. M. Jones, L. Kern, and N. S. Wickersham.

Dr. N. S. Wickersham was then admitted as a delegated member from Madison Co.

Dr. Wm. R. Winton then read an essay on medical organization, which was listened to with interest and received the applause of all present.

The Society then formally adjourned, to meet at 7 P.M.

7 P.M.—The President called the house to order, after which the Committee on Organization made their report, which, on motion, was accepted.

Dr. R. A. Curran moved to recommit the report for revision and correction, which motion was adopted.

On motion, Dr. Wm. Lomax was appointed a committee to

have the address published; and that the expenses incurred in publishing and distributing the same shall be proportioned equally amongst the different societies represented.

On motion, it was ordered that 1000 copies be published and distributed throughout the State.

On motion, the Secretary was requested to have the proceedings of the meeting published in the *Western Lancet*, CHICAGO MEDICAL EXAMINER, *State Weekly Journal, and State Herald.*

On motion, the Society adjourned and repaired to a place where the physicians of Kokomo had served up a fine oyster supper, which was agreeably relished by the inner man, after which there were some spicy jokes passed, a hearty shake of the hands, a good-bye, etc., and as we left for our respective homes we felt the impression on our minds that our time had been most interestingly and profitably spent.

C. R. RICHMOND, M.D., *Pres't.*

N. W. BLACK, M.D., *Sec'y.*

Selections.

ON THE PATHOLOGY AND TREATMENT OF SPERMATORRHŒA.

BY ROBERTS BARTHOLOW, M.D.

Writers on spermatorrhœa have been, too often, content with repeating the observations and opinions of their predecessors. The disagreeable nature of the subject has deterred investigation, has retarded improvement in therapeutics, and has thrown the care of these cases into the hands of irregular specialists. Lallemand's treatise, which has attained an immense circulation, was written, mainly, in the interest of a special treatment. It is not a reputable book; the cases were manufactured; and the therapeutics, based upon false statements, lead to serious errors.

Spermatorrhœa is, unfortunately, very common; it produces

serious mental and physical consequences, and it is most difficult to cure. It would, therefore, seem to be eminently worthy the attention and study of the philanthropic physician, the humanitarian, and, in a lower sense, of any practical doctor who would cure a disease for his own advantage.

Is spermatorrhœa a medical or surgical disease? It has usually been regarded as pertaining to the domain of surgery. This association has given rise to false views of its nature, and to improper methods of treatment. The surgeon views it as an affection of the generative apparatus, due to local causes, and to be treated by local applications. Thus, a recent surgical authority treats of it under the head of "functional disorders of the testicle." It is classified in the same category, and the treatment recommended, based upon the same principle, in other surgical works.* It is the judgment of the writer that spermatorrhœa should come under the cognizance of the physician, and that it belongs to the neuroses. This conclusion leads to practical results, as we shall see in the further consideration of this subject.

It were a labor of supererogation to enumerate the causes of spermatorrhœa. At present, we are chiefly concerned with the pathology of this affection.

The pathological conditions may be comprehended in three groups—local or genital, cerebral, spinal.

The genital consists in excessive sensibility of the sexual apparatus; the cerebral in loss or impairment of the intellectual faculties; the spinal, in loss or impairment of voluntary power, and in deranged reflex actions.

As a starting point for the inquiry, it is necessary to understand the physiology of the sexual act. The phenomena of the sexual congress belong to the class of reflex actions. The excitation of the male organ is transmitted to the cord, and the impression is reflected over the testes, vesiculæ seminales, urethra, and appended muscular apparatus, producing the seminal ejaculation. The whole constitutes the venereal orgasm. It approximates, in many of its phenomena, to epilepsy, and is accompanied in some persons with an epileptiform seizure. There is a great expenditure of nervous power in a single act of coitus or unlawful excitation, manifested by the languor, weakness, and mental feebleness which occur for a short period afterward. In how much greater degree these effects will be

* Article—Diseases of the Male Organs in Holmes' System of Surgery, p. 539, vol. iv. London: 1864. Gross' System of Surgery, pp. 831, 832, vol. ii. Philadelphia: 1865. Erichsen's Surgery, p. 1224, etc.

experienced when the orgasm is frequently repeated! That these effects are due to expenditure of nervous power, and not to the loss of seminal fluid, must be evident, when we reflect that so small a discharge from the body is, under any other circumstances, wholly incapable of producing such results. This point is confirmed by analogy; thus, a slight peripheral irritation may induce paraplegia, epilepsy, chorea, etc. It is further confirmed by the results which ensue from frequent and long-continued excitation of the genital organs, viz.:—paraplegia, epilepsy, insanity, not unfrequently, and in every case, the ready seminal flow, so-called spermatorrhœa.

I. *Genital form.*—As respects the condition of the generative apparatus, the varieties of spermatorrhœa agree. The organs are relaxed, the erections feeble, and the seminal flow watery. Irritation of the neck of the bladder is experienced; the mucous membrane of the urethra is red, injected, and exceedingly sensitive, and the testes are tender, painful, and sometimes wasted. Excitation takes place from slight causes, and the emission occurs very quickly. This circumstance is due, in a limited degree, to the hyper-sensibility of the organs themselves, but chiefly due to the state of the brain and cord—the association of ideas and the morbid excitability of the reflex functions.

There are associated with this condition of the sexual apparatus, symptoms of deranged primary and secondary assimilation, emaciation, weakness, palpitation—all of which have their origin in irregular distribution or loss of nervous force. The following is an illustrative case:—

Case I. A private patient under my charge, from long practice of masturbation, suffered with such sensitiveness of the genital organs as to have an emission upon the slightest excitement. He was pale and somewhat thin; his appetite was capricious, and he suffered much from constipation, wandering pains through the abdomen, borborygmi, and flatulence. He experienced no loss of power in his inferior extremities, neither did he suffer from any cerebral complication; he was melancholy and apprehensive of impotence, but all his mental operations were properly performed.

II. *Cerebral form.*—In the cerebral form, there is superadded to the conditions described under the genital form, certain disorders of the mind. Melancholia, delusional insanity, and dementia are the particular forms which the mental disorders assume. The statistics of any of our large insane asylums show the importance of this tendency in spermatorrhœa. Thus, in the report of Dr. O. M. Langdon, Superintendent of Long-

view Asylum, masturbation is assigned as the cause of insanity in forty-eight of the seven hundred and forty-seven tabulated cases.*

Case II. Was a young man admitted to St. John's Hospital as a private patient, aged about 30 years, 5 feet, 5 inches high, slightly built, and of leuco-phlegmatic temperament. His hair was scanty and beard thin. At the time of admission, he could give no connected account of himself. He was emaciated; his appetite irregular; bowels constipated. He walked unsteadily, and presented a very characteristic expression of disordered intellect. He made much of his intestinal troubles, and seemed anxious to divert my attention from the real source of his infirmities. At night, he was given up to various hallucinations; he did not sleep, but spent the night in talking in a wild and incoherent manner, and in wandering about his room making efforts to escape, to the great terror of his neighbors. From his brother, it was ascertained that he had led a wild and irregular life; that he was addicted to venereal excesses earlier in life, and lately to onanism.

Case III. Was similar to the preceding—a young man who had passed several years in the United States service, and was addicted to onanism. He was led to St. John's Hospital by a comrade, because he could not walk, and would fall down if unsupported. He presented a countenance of fatuity; he had no delirium, no hallucinations, but his "head was light," he said. He was pale, thin, and had little appetite. He admitted to me a degree of self-abuse too revolting to be narrated.

III. *Spinal form.*—The spinal form may or may not be complicated with the cerebral, but there is a distinct condition to which this term is intended to apply. In the spinal form there are present loss of power in the inferior extremities, paraplegia, incontinence of urine and fæces, and altered—diminished or perverted—and referred sensations. The following is a typical case:—

Case IV. A man, aged 35 years, came under my care, suffering from weakness, with perverted sensations of both inferior extremities. He had an ill-conditioned ulcer on the right leg; slight pressure, as of riding on horseback, induced intractable ulcerations of buttocks and thighs. He had, also, incontinence both of urine and fæces. There was some tenderness over spine in lumbar region; the tactile sensibility of the skin of legs and thighs was much diminished. He volunteered the information that earlier in life he had been much addicted to onanism, and,

* Report for 1863.

since the discontinuance of the habit, had suffered from frequent nocturnal emissions. His mental powers were unimpaired. He had the unavoidable depression and anxiety arising from his very miserable physical condition.

These typical forms may not always be clearly marked. That condition of the sexual organs described under the genital form, necessarily exists in all cases, and may or may not be accompanied by disorders of intellect and impairment of voluntary power, but is invariably accompanied by functional derangement of the cord, increased reflex excitability, and probably, also, congestion. After the excesses of venery or the practice of masturbation have ceased, this functional derangement of the cord manifests itself by repeated seminal discharges, either under the influence of slight excitement or involuntarily. It is well known that these involuntary discharges are produced in the sleeping state, under those circumstances which favor congestion of the cord, especially full suppers and lying on the back. This view is confirmed by the effects which certain lesions of the cord produce in the generative apparatus. Thus, seminal emissions frequently take place in the epileptic paroxysm, priapism in some cases, and complete abolition of the sexual appetite in other cases of disease or injury to the cord.

The relation between the sexual organs and the nervous centres is very close and important, but very obscure. The development of the organs at the age of puberty is accompanied by changes in the mental and moral nature. The sexual appetite, suddenly roused into activity at this period of life, often proves stronger than the moral control; and if the imagination is highly developed, the mind of the boy is pervaded with lascivious images—a species of delusional insanity.

A practical question here arises—What extent of involuntary seminal emission is necessary to constitute disease? Nervous persons, leading sedentary lives, are subject to tolerably frequent involuntary discharges. All healthy male adults have occasional involuntary emissions. Within certain limits these are compatible with, or, it may be, are essential to health. Persons accustomed to regular sexual intercourse are still more liable, when the habit has been interrupted, to experience these involuntary losses. When they occur not more frequently than once in two weeks, they are not indicative of disease. Patients are alarmed, also, by seeing not unfrequently after urination or defecation, a whitish tenacious discharge from the urethra, which is not seminal but mainly prostatic, and has no great significance. It occurs quite commonly after long-standing

gleet, and is often misunderstood by the surgeon as well as by the patient. Frequent microscopical examinations have satisfied me as to the character of this discharge.

Another practical question in this connection is—What relation has urethritis, or the so-called irritation of the orifices of the seminal ducts, with spermatorrhœa? A local irritation of these organs transmitted to the cord may induce those lascivious dreams during which the involuntary emission usually occurs; but those irritations rarely have this effect, unless congestion of the cord or an increase of its reflex excitability have been previously induced.

If these views be correct, spermatorrhœa must take its place among the neuroses.

We may now state, in a somewhat more definite form, the conclusions to which we have arrived after a survey of the whole ground.

1. Spermatorrhœa exists in three forms or phases—genital, cerebral, and spinal.

2. The genital, the more common form, is characterized by frequent emissions with little excitement, by derangement of the primary assimilation, by greatly increased reflex excitability and, probably, congestion of the cord.

3. In the cerebral form, in addition to the preceding condition, there is present either melancholia, delusional insanity, or dementia; and

4. In the spinal form, loss of power in the inferior extremities, paraplegia, altered and referred sensations, epilepsy, etc.

The various methods of treatment which have been pursued in spermatorrhœa may be referred to either the medical or surgical order.

The medical has consisted, in the main, in efforts to improve the general health by appropriate tonics, as iron, quinine, strychnia, sea-bathing, douches; by suitable dietetics; by improved hygiene, etc.

The surgical has been directed more particularly to the state of the genital organs, which are presumed to be in a condition of disease. Hence the application of the *porte caustique* to the prostatic portion of the urethra; the use of injections of nitrate of silver, of sulphate of copper, and of acetate of lead; cold hip-bathing and injections of cold water into the rectum. In the surgical order may be classed the mechanical appliances for preventing emissions; for instance, a leather ring armed with metallic points, large enough to be worn without discomfort until an erection occurs, when the pricking will arouse the patient.

It is well known that these methods of treatment frequently fail. The medical is more successful than the surgical. Few practical surgeons, at the present day, will assent to the *dictum* of Lallemand, that "two-thirds of the cases of spermatorrhœa would be beyond the reach of medical assistance, were it not for the beneficial effects produced by the application of the nitrate of silver to the prostatic portion of the urethra." That the *porte caustique* may be useful in a few instances, by reason of the moral effect upon the patient, is probably true. That it cures the disease by relieving the so-called "irritable state" of that part of the canal is undoubtedly incorrect. Not only does it fail to cure the patient, but the application of the caustic is often followed by most serious consequences. In all cases it produces great irritation, frequently strangury and bloody urine, and sometimes dangerous urethritis and cystitis. When the patient is relieved of these symptoms, he may confound this feeling of relief with a real improvement, to be undeceived, however, in the further progress of his case. Sometimes recovery does not take place from the effects of the application of the *porte caustique*, but a troublesome narrowing of the urethra, constituting organic stricture, remains to weary the patient and complicate the treatment.

Little can be said in favor of injections into the urethra or mechanical means to prevent the involuntary emission. They are injurious—if for no other reason—by fixing the attention of the patient upon his disagreeable infirmity; but they, also, by increasing the peripheral irritation, increase the reflex excitability of the cord. The use of stimulant diuretics, such as copaiba and cubebs, need only be mentioned to be condemned.

The medical treatment, the writer ventures to assert, frequently fails, because it does not enter sufficiently into that condition of the nervous centres, upon which the spermatorrhœa mainly depends.

In the management of this affection, it is necessary that we keep in view the pathological states pertaining to its several phases.

In the genital form of spermatorrhœa, there are associated with the peripheral irritation, increased reflex excitability and derangement of the primary assimilation. There may be more or less emaciation or plethora; more usually the former. The therapeutical methods are indicated in this brief pathological summary. The peripheral irritation and the reflex excitability must be diminished. To accomplish this important object, the continued drafts of nervous force consequent on venereal excite-

ment must be suspended. The patient should cease his excesses whatever they may have been, and avoid all sources of excitement, whether the reading improper publications, suggestive novels or works upon his own malady, or the society of women of easy virtue. The liberties between the sexes permitted by custom in many places and in certain circles of society, without extending so far as the gratification of desire, are so very injurious to young men with "seminal weakness" that they should be absolutely interdicted. The mind of the patient, should, as far as possible, be freed from any association with his infirmity. Hence constant and agreeable employment, physical rather than mental, or an association of the two, is especially desirable. The patient may be much aided in the execution of these plans for his improvement by the administration of anaphrodisiacs, of which the bromide of potassium is, incomparably, the chief. To a man suffering under the genital form, twenty to forty grains of the bromide may be given every night until sexual desire is entirely suspended. The quantity of the remedy, which will be required to accomplish this result, will vary in different individuals. At the same time the general condition of the patient must not be neglected. If he is plethoric, his digestion active, and his bowels constipated, he will be benefited, if somewhat reduced by saline cathartics, by *liquor postassæ*, by a less liberal diet, and by diminishing the number of hours devoted to sleep. It is not frequently, however, that spermatorrhœa is associated with a condition of plethora: the opposite condition or anæmia is the rule. In this latter condition the reflex excitability of the cord is so much increased that the feeblest irritation produces a prompt emission, and the frequent discharges of nervous force affect the supply to all the organs—whence come palpitation, indigestion, constipation, irritable bladder, pain in the back, debility, and mental feebleness. In this condition the bromide of potassium is indicated to diminish the reflex excitability of the cord, and to suspend the sexual appetite, and iron, quinine, and other remedies, to improve the general health.

Whether the patient be plethoric or anæmic, remedies should be employed to relieve congestion of the cord, which occurs to a greater or less extent in every case. As the involuntary emissions are usually nocturnal, and occur chiefly when the patient is lying on his back, the cord being then most dependent, management of the position in bed is an important part of the treatment. He should lie upon his side, and if unable to continue in this position when asleep, should adopt some mechanical appliance to compel it. Tying the hand to the post of the bed, or

the contrivance of Lallemand will accomplish this object. The remedial agents for affecting the same purpose, are still more important. In addition to the bromide of potassium, which possesses this property to a very considerable degree, *belladonnæ* and *ergot* may be employed. One-fourth of a grain of the extract of belladonna and two grains of Bonjean's ergotin, or five grains of fresh ergot, may be given three times a-day. In anæmic cases iron may be combined with the preceding remedies.

By these means the sexual appetite may be completely suspended, the morbid excitability of the reflex function and the congestion of the cord may be cured. These efforts must be continued until the irritability of the genital organs subsides. Having accomplished these objects an important duty yet remains—we must restore the patient to the proper performance of his sexual functions, and this must be accomplished in such a way that he will not lapse into his former infirmity. The doses of bromide must be diminished, and finally the remedy discontinued; the ergot and belladonna must be suspended, and tonics and special excitants must be employed. Extract of nux vomica or strychnia, with the saccharated carbonate of iron, is a combination very useful for this purpose. To control the action of the nux vomica and prevent too sudden stimulation of the cord, it is frequently desirable to combine belladonna with the strychnia and iron. However paradoxical such a combination may appear—seeing that strychnia and belladonna are, in some respects, physiologically antagonistic—it has been too frequently beneficial to be rejected on theoretical grounds. Cannabis Indica and allotropic phosphorus, are, also, useful in restoring the normal activity of the generative organs after this suspension of their actions by remedies.

During the whole period of time occupied by this treatment, certain accessories must not be disregarded. Simple but nutritious food must be taken; the supper should be light and eaten four or five hours previous to retiring, and stimulants should be avoided. Fluids and articles of food having a dicuretic action, should be sparingly used, since erections occur in consequence of a full bladder. Laxatives are indicated, if constipation exist, but not otherwise. A quart of cold water thrown into the rectum will often act more beneficially than laxatives.

In that phase of spermatorrhœa which has been denominated the cerebral, serious difficulties are encountered. In addition to that derangement of the sexual-spinal system, described under the genital form, there exists the complication of mental derangement. If this derangement have proceeded no further

than melancholia or delusional insanity, something may be done to arrest its progress and restore the *mens sana in corpore sano.* If dementia or complete fatuity have resulted, the case may be considered nearly or quite hopeless. A smaller number of these cases would probably find their way into our asylums, if physicians generally paid more attention to the moral, mental, and remedial management of them in their incipiency. The difficulty in these cases arises from the fact that no moral influences can be used to interrupt the habit of abuse. The mechanical and other appliances which have been employed for this purpose, are merely temporary expedients which more usually fail than succeed.

It is in these psychical affections dependent upon abuse that the bromide of potassium manifests peculiar powers. Under the use of this remedy the reason frequently gains control of the disordered imagination. Beside, by destroying desire, it does away with the temptation to repetitions of abuse. When this result has been accomplished, the chain of morbid impressions must be still further interrupted by change of scene and agreeable occupation, especially physical employment. Until the treatment has proceeded so far, it will not be desirable to use those means which have been suggested for diminishing the reflex excitability and for restoring the perverted functions.

In the spinal form of spermatorrhœa, which, as exhibited in the illustrative case under that head, manifests itself by loss of power, altered and referred sensations, paraplegia, etc., there is probably structural altereation of the cord, notwithstanding, the derangement may appear to be merely reflex. So long continued functional derangement, would certainly result in organic change. In this condition of the cord, whether reflex or centric, it is not prudent to administer the bromide of potassium, which in large doses has produced, as one of its physiological actions, loss of power and paralysis of inferior extremities. Strychnia is still more objectionable if the lesion be centric. The remedies which have been most effectual in this condition are belladonna, cimicifuga, nitrate of silver, etc. The extract of belladonna may be used in a mixture with fluid extract of cimicifuga. This prescription is applicable to a less advanced stage of the disease. When paraplegia occurs the nitrate of silver is an appropriate remedy, but the tendency of this salt to be deposited in the skin, producing an unpleasant discoloration, must not be forgotten. If structural change has been arrested, or the paraplegia be merely reflex, then faradisation, strychnia, and other remedies appropriate to such a state may be used with advantage.

In the typical cases presented in illustration of the several phases of spermatorrhœa, the treatment inculcated in this paper has been pursued. It may be useful to state the result. In the first case, the nightly emissions have been reduced to one in a period of about ten days; his general health is much improved, and his mind elevated from a state of despondency to cheerfulness and a confident expectation of speedy recovery. Case II. has been discharged cured, after two months' stay in the hospital. His treatment consisted in the administration every night of forty grains of the bromide of potassium, and three times a-day a pill containing one-fourth of a grain of extract of nux vomica, three drops of fluid extract of ergot or one-fourth of a grain of extract of belladonna, and three grains of saccharated carbonate of iron. His delirium and hallucinations ceased on the second night after commencing these remedies. Case III. left the hospital after ten days' stay, relieved, but not cured, and Case IV. is travelling in pursuance of his business and may now be considered well. At last report, his symptoms had disappeared, and he was restored to a state of health altogether unusual in his experience.

I have not, thus far, alluded to some of the moral and social questions which belong to this subject. The physician is not unfrequently desired to give an opinion as to the propriety of marriage of young men suffering from spermatorrhœa. A wise judgement is not easily made up on this question. Attention to the following rules, will, at least facilitate a solution of the problem:—

1. If the spermatorrhœa exist in the cerebral or spinal form, marriage is improper.

2. Marriage is proper in the genital form, if the marriage rite may be consumated, although imperfectly.

3. Marriage should never be recommended as a curative means.

There can be no doubt that judicious sexual intercourse will prove curative in the genital phase, provided that the reflex excitability of the cord be not so great as to prevent intromission of the male organ. Disappointment and unhappiness almost invariably result when marriage is resorted to as a remedy.

The management of youths, addicted to masturbation, and the treatment of impotence, pertain to this subject, but are omitted for want of space. The case of the former appeals strongly to our philanthropy and is worthy of our best efforts; the latter is not without importance in a moral and social point

of view. In a future number I may discuss these subjects at length corresponding to their importance.—*Cincinnati Journal of Medicine.*

THE USE OF THE ARTIFICIAL MEMBRANA TYMPANI.

By D. B. St. JOHN ROOSA, M.D., Aural Surgeon to the New York Eye and Ear Infirmary. Lecturer in the University of the City of New York.

Case I. A farmer, *æt.* 30, from Michigan (at the Infirmary), January, 1865. The patient had scarlet fever 13 years ago, since which time he has suffered from periodical attacks of pain referred to the ears, discharge of pus from them, and vertigo. He has also been so deaf as not to hear ordinary conversation ever since the attack of scarlatina. Patient's general condition is bad, he having suffered much from intermittent fever. Cannot hear a watch, which should be heard by a person with normal hearing power, more than four feet, at all, neither on auricle, mastoid process, nor frontal bone. The right membrana tympani has been wholly removed by ulceration, no trace of *ossicula auditus.* Mucous membrane of the cavity of the tympanum hypertrophied. A portion of the periphery is all that remains of the left membrana tympani. The incus and stapes remain in situ, but the malleus has been lost. Mucous membrane of cavity of the tympanum also hypertrophied. Both Eustachian tubes are pervious, as proven by the Valsalvian experiment. The artificial membrana tympani was placed in the right ear without producing the slightest benefit; being inserted in the left, it immediately so improved the hearing, that the watch could be heard two inches from the auricle, and ordinary conversation several feet. The patient was enabled to pronounce isolated words after a speaker standing more than 12 feet distant. The patient was under observation for a few days, during which time the hearing remained as good as above stated. He then left for his home, taking with him a supply of the artificial membranes.

Case II. Miss. U., *æt.* 30, N.Y., May 31, 1863. Patient has been deaf ever since she can remember. Does not hear conversation unless specially addressed, and then the voice must be raised. She knows no cause for the deafness. Hears the watch two inches from the right auricle, not at all on the left side, except upon the mastoid process. Left membrana tympani opaque in its mucous and fibrous layers. The light

spot is lessened in size, and the head of the malleus is abnormally prominent. Right membrana tympani perforated by ulceration in centre, the remaining portion is granulated. A very slight amount of greenish fœtid pus is secreted by the cavity of the tympanum and the remains of the drum. The pharynx is congested. Eustachian tubes impervious, as shown by the Valsalvian experiments, Politzer's method, and the catheter. General health not good, although no especial disease is recognized. Patient was seen every few days until August 5th, during which time the following treatment was carried on:—Permeability of the Eustachian tubes was secured by the use of the catheter and Politzer's method, together with the use of gargles, and a weak solution of sulphate of zinc (gr. j. ad. aq. ℥j.) was applied to the drum, after daily syringing, in order to check the ulcerative process. When this was restrained, an artificial membrana tympani was applied and worn except at night. It caused, at first, much irritation and furuncular inflammation. The artificial drum was removed until this was checked. The drum is now worn all day, and the watch is heard from six to eight inches with it, only two without it. Ordinary conversation heard fairly; hearing on the other side as before. Patient expresses herself as being very much improved.

Case III. J. J. V. P., *æt.* 28, La., Aug. 12, 1865. Three years ago, while in the artillery service, patient lost his hearing gradually, although he remembers at one particular time, after being engaged in heavy firing, that he had a distinct sensation of ringing and fulness in his ears. When a child he had the same sensation in the right ear, after which he was deaf from that ear for some time. The ears were treated by the medical officer of the regiment by the application of tannic acid. He continued in the service until the end of the war, and was subjected to various kinds of treatment, application of arg. nit., cup. sulph., and other astringents. At times, he could hear quite well, and then his ears were "stopped up" for a time. He was exposed to much hardship during a great part of his term of service. The deafness has increased until now, when he cannot hear at all from the right ear, and from the left with the aid of an ear trumpet. He does not hear the watch at all on either side. The right membrana tympani, except as to the upper portion, where a small rim remains, has been removed by ulceration. The integument of the auditory canal, and the mucous membrane of the cavity of the tympanum are hyperæmic and swollen. The little bones of hearing cannot be found. There is a slight amount of fœtid pus secreted by the

mucous membrane. On the left side, the auditory canal is extremely hyperæmic, swollen, and tender. The epidermis is exfoliating. The membrana tympani is not seen, but the Valsalvian experiment shows that it is perforated. Both Eustachian tubes are open.

October 18. Since the first date, the patient has been seen twice a-week, and has been treated in the following manner:—The ears have been gently syringed with warm water twice a-day, a weak solution of the sulphate of zinc (gr. ss. ad. ℥j.) has been dropped into the auditory canal and cavity of the tympanum, always warming it before use, and injections of the vapor of iodine have been made into the middle ear, by means of the combination of Politzer's method for rendering pervious the Eustachian tube with an inhaler, described by Dr. Buttles of this city.* (This method of combination is, I believe, original with myself. Buttles' inhaler consists, essentially, of a hollow bulb of hard rubber with a nozzle. In the cavity of the bulb is placed a small sponge, which is saturated with the tincture of iodine. This bulb is attached to a bit of rubber tubing, and this is in turn placed over the pipe of an ordinary soft rubber globular syringe (Politzer). The nozzle of the inhaler is inserted in one nostril, the other being closed with the finger, the mouth is also shut, and the patient told to swallow (a little water facilitates this); just as the patient is in the act of swallowing, the physician compresses the bulb of the syringe, the Eustachian tubes open, and the air, iodized, passes into the cavity of the tympanum, or, barring a mooted point, into the faucial orifice of the Eustachian tube.)

The condition of the patient's ears is now as follows:—On the right side the hyperæmia and swelling are reduced to a minimum, as also on the left. In the left cavity of the tympanum the incus in position can now be distinctly defined. On this side the artificial drum is worn by day, except when the patient is alone for some hours, and removed at night. On the right side the drum has been worn at times, but never with any appreciable change as to the hearing power, which remains as when patient first came under observation, except that he can now hear the alphabet pronounced through an elastic tube.

On the left side he can hear the watch over the auricle, and ordinary conversation near at hand with ease. He can hear a sermon in church, and goes once more into society, from which his previous amount of deafness completely shut him out. He does not now use an ear trumpet at all, hearing better without

* New York Medical Journal, July, 1866.

the drum than he did formerly with the aid of a conductor of sounds. The patient is extremely intelligent, and to his strict attention to the directions given—his careful use of the artificial drum, removing it whenever it has caused the slightest irritation—a great part of the modicum of success attained is due.

Case IV. Miss N., *æt.* 18, July 18, 1865. One year ago was quite ill, the nature of the affection cannot now be accurately ascertained. During the sickness both ears began to discharge pus, and deafness appeared. The discharge was checked, but the deafness has gradually increased until now, when she cannot hear ordinary conversation, and hears the watch tick only one inch from the auricle. Each membrana tympani has a central perforation, and there is a slight amount of yellow fœtid pus secreted in the cavity of the tympanum. The Eustachian tubes are pervious. The artificial drum improves the hearing on each side, by the watch, to a distance of six inches, and renders ordinary conversation easily heard. The patient was directed to daily syringe the ears with tepid water, using afterwards an astringent, and to wear the drum during the day. Patient has come to the office very irregularly, and carried out the directions very inefficiently. She seems to have an aversion to the use of the drums, wishes to be cured without wearing them. They cause very considerable irritation of the auditory canal.

Case V. Rachel C., *æt.* 16, April 1, 1865, (at the Infirmary.) One year and a-half ago, patient discovered that she did not hear well. The deafness still continues, with some occasional pain and noise in the ears. She can hear the watch three inches from the right ear, one inch from the left. There is a perforation of each drum, with a slight ulcerative process going on in the membrane. Patient is of a strumous diathesis, has a curvature of the spine, but is just now in fair general health. Careful syringing of the ears, followed by the use of an astringent, was directed. There is no account of the condition of the Eustachian tubes until June 8, when Dr. C. E. Hackley inserted an artificial membrana tympani and made the following note:—"Artificial drum tried on the right side, of which the Eustachian tube is pervious, the hearing distance increased to ten inches. Politzer's method of rendering pervious the tube was practised.

June 22. "Left Eustachian tube is now pervious, with artificial drum, hearing advanced to twelve inches."

Sept. 14. I saw the patient and made the following "Patient has been in the country and has worn the artificial

drum by day ever since. Hearing distance, right ear, twenty inches, left two feet. Drums cause no irritation whatever."

Remarks.—Surgical literature, so far as I can find, has comparatively little reference to cases in which the artificial drum has been worn. I have, therefore, given the foregoing somewhat in detail, in order to show about what may be accomplished by the substitute for the natural membrane. The cases have been taken, without any particular choice, from a number of which I have notes. It is the habit of the writer to tentatively apply the artificial membrane to all ancient perforations, where the hyperæmia and inflammation or discharge of pus are not very considerable. Recent cases of perforation, as a rule, heal so readily that the use of the drum is not indicated.

In order to a successful use of the artificial membrane—

1. The Eustachian tube must be pervious.
2. The stapes or incus of the ossicula must be *in situ.*
3. The inflammatory action in the external auditory canal and remains of the drum must not be excessive.

It is also of great assistance to the surgeon in procuring a successful wearing of it, that the patient should be intelligent enough to realize that at the best the disc of rubber is a foreign body, which should be carefully removed at any approach of irritation. It is, therefore, not of much use in the case of children, or unusually stupid or careless adults. It should also be stated, that cases have been found where all the above-named conditions have been fulfilled, where it was *a priori* supposed that the artificial membrane would do good, and yet repeated trials proved that the use of it effected nothing for the hearing.

In these cases we may perhaps conclude that there existed very considerable rigidity of the quasi articulation of the stapes with the *fenestra ovalis.*—*American Jour. Med. Sciences.*

THE RINDERPEST.

London, Jan. 11, 1866.

Editor Philadelphia Medical and Surgical Reporter:—An animated discussion of a very important subject is now going on among the professional and lay public. I allude to the nature and treatment of the *rinderpest*, or cattle disease, which has within a few months past created very extensive havoc, and more extensive alarm, over a very large portion of this kingdom, but especially in England. To such an extent has it prevailed in the vicinity of London, that the supply of milk is

said to have been materially diminished. According to official reports made to the Government, the disease has attacked, during the last seven months of 1865, 73,549 out of a total number of 159,710 head of cattle in farms, sheds, and other places, where it was reported to exist. Of the whole number attacked, only 9579 recovered, about one-eighth.

Some eminent medical men have gone into an investigation of the character of the disorder. Mr. Ceely has recently discovered some points of analogy between human small-pox and rinderpest, and Dr. Murchison, the distinguished writer on fevers, has given an opinion confirmatory of this diagnosis. A medical report of 1839 is quoted from the Transactions of the Provincial Medical and Surgical Association, to prove "it has been shown by unquestionable evidence that cattle and other animals have for centuries been known to be affected with variola." It raged in England in 1745, and again in 1770, and it appeared amongst horned cattle, with more or less virulence, so late as 1780. Dr. Layard's observations on the successful inoculation from cow to cow is regarded as completing the chain of evidence in favor of the view that "it was the remains of this violent epizootic that Dr. Jenner found in Gloucestershire, and which, being occasionally transferred to the milkers, secured them from subsequent small-pox." What a treat the medical world is promising us! We have to pay dearly for it; but natural cow-pox has been a rarity for a long time past, and it is said to be possible—some declare probable—that the deadly murrain now afflicting our kine may turn to that human-life-preserving, benignant, and most desirable affection—cow-pox.

Another important witness in favor of the identity of variola and rinderpest, is Prof. Ferguson, in his report to the Government on the cattle plague in Ireland, as follows:—

He says:—"The results of some investigations recently made relative to the sanitary state of cattle that had had the pustular disease generally known as 'cow-pox' induce me to recommend that all bovine animals be inoculated with vaccine matter. As yet, there has not been sufficient direct evidence furnished by specially instituted experiments to justify the assertion that vaccination will insure cattle an immunity from the plague, or even a diminution of its virulence; but as vaccination has very rarely proved injurious to stock, and certainly protects it from some diseases, it is desirable that it be immediately had recourse to in Ireland, as an expedient that may possibly eventually prove of service should cattle-plague unfortunately make its appearance in this country. The milk of cows suffering from

cow-pox should not be used as food either for human beings or calves."

The Pathological Society had the subject before them last week, and from the remarks made, it appears that a difference of opinion yet prevails upon it.

"Dr. Quain introduced Mr. Hancock, a veterinary inspector of the Uxbridge district, as the first individual brought under the notice of medical men with an eruption, 'the appearances of which were exactly those of a declining vaccine vesicle.' Dr. Murchison, Mr. Ceely, and Prof. Spooner were struck with the 'vaccine character' of the malady; and the first to discover the nature of this interesting case was Mr. Rayner, a surgeon at Uxbridge. Dr. Burdon Sanderson and Professor Gamgee spoke strongly against the probabilities of rinderpest being *variola*, and the first named gentleman has communicated an interesting description of the cattle-plague eruptions to the *Lancet*. He says:—'During the last month I have had opportunities of carefully observing the appearances presented by the cutaneous eruption in all its forms, and have watched it with all the attention of which I am capable. Without unduly anticipating the description of the skin-affection contained in my preliminary report, which is now ready to be submitted to the Royal Commission, I may state that the so-called scabs are not produced by the desiccation of pustules, but by the incrustation of the abundant secretion from the sebaceous follicles; that vesicles never occur at any period of the disease, the so-called flattened vesicles, described by Dr. Murchison, on the udder, being solid elevations, the structural elements of which are epidermal. The affection may be stated, so far as the investigations hitherto made enable me to judge, to be of the following nature:—There is, in the first place, hyperæmia of the cutis in the affected parts. Secondly, an excessive secretion from the cutaneous glands. Thirdly, an exuberant development of nuclear corpuscles in the deep layer of the epidermis, by which the more superficial layers are separated from the true skin. In some parts, particularly on the udder, near the roots of the teats, and on the scrotum, this exuberant growth of nuclear bodies takes place at particular points only, giving rise to the elevations above mentioned. These elevations, which have been accurately designated by previous authors as nodules (*knötchen*), or heaps (*höckerchen*), and other words implying their solid character, gradually soften and break up, sometimes becoming semi-fluid, and thus acquiring an unreal resemblance to pustules."

"Dr. Parkes, of Netley, writing in vindication of Mr. Ceely's claims to priority in the supposed discovery now agitating the public mind, says:—"The identity of cattle-plague and small-pox, though probable, is not yet proved. We must all anxiously wait for the experimental evidence which can alone definitely settle this momentous question.'"

From this it would appear that the question is yet an open one, but as the government has taken the matter in hand, energetically, it is to be hoped that it will receive the attention of the best diagnosticians of both the medical and veterinary schools. Respecting the treatment of the disease, while its real nature is undetermined, that must of course remain purely empirical and uncertain. Homœpathy has ventured upon this field also, but judging from the statements contained in the newspapers, its success has been coincident with the dimensions of its doses.

Apropos here, I enclose an article from the *London Punch* of this week, which is clearly to the point:—

Trichiasis.—That other serious disease of the brute creation, *Trichiasis*, which not only affects the hog, but also the human being, is likewise exciting a great deal of attention, more especially on the continent. Its ravages appear to have been recently quite extensive, and to have proved fatal in a number of instances among eaters of pork. It has been suggested as a necessary sanitary measure, that no pork, in any form, be allowed to be sold without having been first examined by the microscope, as the only means by which the presence of the *trichina spiralis* can be detected. Such a measure would seem to be imperative in places where the disease prevails—and as a prudential step it would be justifiable in many other localities.

Very truly yours,

JOHN H. GRISCOM.

Foreign Correspondence.

Berlin, February 20th, 1866.

The surgical clinics at the Chirurgisch-ophthalmologischen Klinikam der Universälät in Berlin, under direction of Prof. Von Langenbeck, have been very rich in operations during the present winter. Of the cases brought to the operating table,

carcinomatous tumors have predominated to a considerable extent. At Prof. VIRCHOW'S pathological rooms a very large proportion of the *post mortem* examinations reveal scrofulous affections of some one or all the internal organs. There is certainly a greater prevalence of scrofulous diseases among the Germans than among Americans. It seems to be confined chiefly to the poorer classes; their habits of life and mode of living probably have much to do with this. Their chief article of diet is black bread (part rye.) Meat is so dear that a poor man cannot afford any on his bill of fare, unless it be of a very poor quality. The German's diet may be said to be almost exclusively vegetable—hence, a lower state of vitality than normal exists among the people, and when disease attacks the system it readily assumes a chronic form. Chronic diseases are certainly the most prevalent, and the majority of deaths are from chronic cases. In short, to use a comparison that none but an American can fully understand, in Germany men live slow and die slow, in America they live fast and die fast. I have also noticed an almost total absence of rheumatic difficulties, and in endeavoring to account for this I very naturally attribute it to the diuretic which the German takes into his stomach every day in the form of *beer*.

The little worm, *trichina spiralis*, has caused considerable alarm among the lovers of raw pork and sausages, as well as claiming the attention of medical men of Germany. In a small city in Saxony, out of about 200 people that ate swine flesh containing trichinæ, nearly 50 per cent died. According to Prof. VIRCHOW, as soon as a trichina is liberated in the stomach it breeds hundreds of little trichinæ, which at once commence boring through the tissues in every direction and do not stop until they have reached the muscles, where they take up their abode, surrounding themselves with a kind of calcareous cocoon which is visible to the naked eye, as a minute white speck. In this condition they are believed to remain unchanged and without producing any serious trouble unless the flesh is eaten, when the same process takes place as above described. Trichinæ are killed at a temperature above 165° Fahrenheit, so

there is no danger to those who eat their meat well cooked. To save the expense of a fire, the poorer classes eat their sausages and swine flesh raw. It is difficult to tell how the swine become infected with trichinæ, unless we conclude that hogs get them from the rats they eat, and if we attempt to account for the manner in which rats get trichinæ, I fear it will be necessary to come back to the starting point, and assume that rats get trichinæ from the pigs they eat!

Prof. Von Langenbeck obtains remarkably good results in resections of the joints, owing to the immobility he secures to the limb by the use of the *gypsum bandage*, which, I think, for several reasons, is preferable to the starch bandage. It is applied easier, and does not become foul from absorbing the secretions. Prof. Langenbeck's method of applying the gypsum bandage is as follows:—Placing the limb in a proper position, a flannel bandage is first applied, immediately over this a bandage of gauze or tulé, which has been previously filled with dry gypsum, is applied wet, then follows a coating of gypsum and another gauze bandage, and, lastly, a second coating of gypsum. In case of a resection or compound fracture, a bit of tin is placed over the wound before applying the flannel bandage, and after the gypsum has set a window is cut through the bandage and the tin removed. The gypsum bandage is allowed to remain until it is necessary to commence passive motion, or, in case of a fracture or resection of one of the long bones, until nature has completely restored the part. As I remarked in my last letter to you, I believe that we could have used the gypsum bandage in the field, during the last war, with the greatest advantage, and with the happiest results, in fractures and resections. I am of the opinion that the immobility it secures to the limb will allow conservative surgery to be carried as far in military as in civil practice, providing equally good food and pure air can be secured.

Prof. Langenbeck's operation for remedying the defect of cleft palate, consists in raising the periosteum in connection with the soft parts, thereby securing a bony roof to the mouth. In describing this operation I will not attempt to enter into

details, except as they bear particularly on Prof. LANGENBECK'S operation. After freshening the edges of the fissure, two incisions are made on either side of the roof. The connecting mucous membrane left intact, serves to hold the flaps in proper position when they are loosened up, and also obviates the necessity of inserting ligatures, which could not be avoided if one long incision should be made instead. The incisions are made from behind forward, thereby avoiding the blood, and leaving a clear field for cutting. For this part of the operation, a strong scalpel is used, having a convex cutting edge; then by means of elevators, the periosteum is separated from the superior maxilla. For loosening up the periosteum from the palate bones, where it is not convenient to work with the elevators, a double-edged scalpel with flexed ends, and one with a broad and flexed end, are considered the best forms. When the flaps are completely loosened up, the freshened edges approximate each other, and they are then united with silk ligatures, which are inserted by means of a needle. This needle is arranged with a small sliding steel wire, after the needle is inserted this wire, which has a small hook on the end, is slipped out and the ligature secured, when the needle is withdrawn, bringing the ligature with it. Two wire hooks to insert in the mouth, connected by a rubber band to pass behind the neck, is a simple apparatus for keeping the mouth on the stretch laterally. I have witnessed six uranoplastic operations by Prof. LANGENBECK, and in all very favorable results have been secured. Ever your friend,

JNO. M. WOODWORTH.

Book Notices.

A TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE; DESIGNED FOR THE USE OF PRACTITIONERS AND STUDENTS OF MEDICINE, By AUSTIN FLINT, M.D., Prof. Principles and Practice of Medicine, in the Bellevue Hospital Medical College; and in the Long Island College Hospital; Fellow of the New York Academy of Medicine, etc. Philadelphia: HENRY C. LEA. 1866.

This is a new work on the practice of medicine, by one whose

writings are already well known to the profession. The present work consists in one full-sized octavo volume of 876 pages, substantially bound, but printed on too small type for agreeable reading. The first 109 pages are occupied with a discussion of the principles of medicine or general pathology, and the remainder to the special pathology, causes, symptoms, diagnosis, and treatment of individual diseases. It presents a brief, but concise and reliable summary of those pathological and therapeutical views that are most generally accepted by the profession at the present time; and, consequently, it is well adapted for a text-book in the hands of students. It will also form a valuable addition to the library of the practitioner. There are some views presented by the author, in regard to important items of practice, from which we should feel compelled to dissent; some of which we will endeavor to point out hereafter. In the meantime, we cordially commend the book to the attention of our readers.

For sale by W. B. Keen & Co., 148 Lake St.

The Malformations, Diseases, and Injuries of the Fingers and Toes, and their Surgical Treatment. By Thomas Annandale, F.R.C.S. Edinburgh; Lecturer on Surgery; Assistant-Surgeon to the Edinburgh Royal Infirmary. The Jacksonian Prize Essay for the year 1864. Philadelphia: J. B. Lippincott & Co. 1866.

This is an octavo volume of 292 pages, printed on excellent type and good paper, with a considerable number of well-executed plates and drawings for illustration. The work is divided into seven chapters, embracing the following topics, namely:—Congenital Affections; Inflammatory Affections; Tumors; Injuries; Non-Congenital Contractions and Distortions; Resections; and Amputations. The work is one of real merit, and constitutes a valuable addition to our surgical literature.

For sale by S. C. Griggs & Co., Lake St. Price $5.

We have also received the following valuable and interesting works, namely:

Lectures on Epilepsy, Pain, Paralysis, and certain other Disorders of the Nervous System. By Charles Bland Radcliffe, M.D., Fellow of the Royal College of Physicians of London; Physician to the Westminster

Hospital, and to the National Hospital for the Paralyzed and Epileptic, etc. Philadelphia: Lindsay & Blakiston. 1866.

A small-sized octavo of 280 pages.

The Physiology of Man; Designed to Represent the Existing State of Physiological Science, as Applied to the Functions of the Human Body. By Austin Flint, Jr., M.D., Prof. Physiology and Microscopy, in the Bellevue Hospital Medical College, New York, and in the Long Island College Hospital; Fellow of the New York Academy of Medicine; Microscopist to Bellevue Hospital. New York: D. Appleton & Co. 1866.

A full-sized octavo volume of 502 pages, embracing the discussion of the following topics:—Introduction; the Blood; Circulation; and Respiration.

For sale by S. C. Griggs & Co., Lake St. Price $4.50.

A Practical Treatise on Urinary and Renal Diseases, including Uri-Deposits. Illustrated by numerous Cases and Engravings. By William Roberts, M.D., F.R.C., London; Physician to the Manchester Royal Infirmary; Lecturer on Medicine in the Manchester School of Medicine. Philadelphia: Henry C. Lea. 1866. Octavo, pp. 516.

For sale by W. B. Keen & Co., 148 Lake St.

Extract from an Unpublished Essay on Physical Force. By Louis Mackall, M.D. Washington. 1865.

An Essay on the Life in Nature. By Louis Mackall, M.D. Washington. 1865.

An Essay on the Law of Muscular Action. By Louis Mackall, M.D. Washington. 1865.

The last three essays are pamphlets, varying from 16 to 34 pages.

Editorial.

American Medical Association.—The next annual meeting of this great national organization will commence on the *first Tuesday* in May, in the city of Baltimore. We are informed that the prospect for a good meeting was never better. Are the delegates appointed to represent the profession of the Northwest making themselves ready to attend?

Lecture Fees in Medical Colleges.—The subject of College lecture fees, seems to have been attracting some attention, more especially from those connected with the Schools in Philadelphia, New York, and Boston. Two or three days since, we saw a printed circular addressed to the Secretary of one of the Colleges in this city, in which it was stated that the Medical Schools in the cities just named had agreed to advance the charge for Lecture fees to one hundred and forty dollars, the previous rates having been, generally, one hundred and five. The circular not only asserted that such advanced rate had been agreed to by the Medical Colleges in those cities, but that it would be so published by them, respectively, in their next annual announcements. The circular was signed by a committee of representatives from the several schools alluded to, and contained a request that the Faculties of the schools to which it was addressed, would communicate their views in relation to the subject, to the chairman of said committee. This forcibly reminded us of a certain class of patients, who go to their physician, and after stating their complaints, gravely announce to him that they have *fully determined* to take certain medicines, and ask him if he does not think they are right. The language of the circular letter shown to us, certainly led to the supposition that so far as the Medical Colleges of Philadelphia, New York, and Boston were concerned, the question of an advance in the rate of lecture fees was settled by a positive agreement to charge, in future, one hundred and forty dollars, which would be an advance of thirty or thirty-five dollars over previous rates. Yet we find in the *Medical and Surgical Reporter*, of Philadelphia, for March 17th, the following editorial paragraph:—

"We have been requested to say that twenty dollars is the highest limit that has been spoken of as the proposed increased rate for tickets in the Medical Colleges. In view of the increased cost of instruction, the amount would not be unreasonable."

How this is to be reconciled with the positive statements of the official circular, we do not know. It would seem to indicate, however, that the question of fees is not yet settled, even

in the schools of the principal cities of the Atlantic States. In what used to be called the North-Western States, the lecture fees in the Medical Colleges range from seventy dollars down to nothing. In Cincinnati, for instance, there are three Medical Colleges, one of which charges a lecture fee of $15.00, another $40.00, and another $70.00. In Chicago there are two Colleges, one charging $40.00, with a sixteen weeks' term, and the other, $50.00, with a five months' term.

At Ann Arbor, the medical department of the University of Michigan charges $10.00, as an initiation fee, to be paid but once, and no lecture fees. At Keokuk, the medical department of the University of Iowa charges (if we remember right) an initiation fee of $15.00. These figures are sufficient to show that in this section of the Union, at least, there is neither concert of action among the schools, nor any approach to uniformity of charges for lecture fees.

Whether it is possible to obtain such concert of action as to secure more uniformity in the rate of charges, hereafter, is doubtful. But suppose some concerted action was practicable, either by correspondence, or through the agency of a convention, what constitutes the basis for determining how much the annual lecture fees in a medical college should be? Shall they depend on the actual cost of sustaining a college, with the addition of a fair remuneration to each Professor for the time consumed in giving the instruction required in his department? Shall they be made to depend on the estimated ability of a majority of medical students to pay? Is it desirable to make the cost of medical college instruction so great as to discourage attendance on such institutions, and thereby indirectly encourage the entrance upon the practical duties of the profession without collegiate instruction? Or would it conduce to the best interests of both the profession and the community, to have the taxes upon medical knowledge—or, in other words, the cost of obtaining all the advantages of a thorough course of medical college instruction—as little as possible?

All these are questions requiring a fair and candid consideration in determining the proper rate of lecture fees in medical

colleges. The circular to which we have alluded, as well as the paragraph quoted from the *Medical and Surgical Reporter*, rests the proposed increase in lecture fees solely on the ground of increased cost of medical instruction.

That the inflated condition of the currency, and the consequent extraordinary prices for everything that enters into the wants of individuals or families, which has existed during the last three or four years, has not only increased the expenses of those engaged as teachers in medical colleges, but has also increased largely the cost of everything required for their museums and means of illustration, needs no proof. And if the lecture fees in our colleges had been proportionately increased three years since, it would have been in strict consonance with the circumstances of the time. But at this moment we have probably reached the climax of paper currency inflation, with the general tendency of prices already downwards; and regarding the matter in a purely financial aspect, with the history of all previous paper currency inflations as our guide, we should expect that by the time the proposed advance in lecture fees would go into practical operation, the financial condition of the country would be anything but favorable for such a change.

But if the present condition of the currency and prices could be supposed permanent, would it, even then, be beneficial either to the colleges, the profession, or the public, for the medical colleges in our large cities to increase the aggregate cost of attendance on a course of lectures in them? It must be remembered that the lecture fees are but a minor part of the expenses necessarily incurred by the student in attending a college course of instruction. The enormous increase in the prices of board, room rent, fuel, lights, clothing, &c., all come as directly upon him as upon the members of the college faculties; and in most of the large cities the cost of these items has increased threefold within four years. This has already caused a decidedly larger proportion of students to resort to colleges located in smaller towns, where the expenses of board, as well as lecture fees, more nearly corresponded with their pecuniary resources. Let the colleges in Boston, New York, Philadelphia, Cincinnati,

St. Louis, and Chicago, add from twenty to thirty-five dollars more to their annual lecture fees, and they will simply make a corresponding increase in the number of students in the lecture rooms of Concord, Woodstock, Pittsfield, Cleveland, Columbus, Ann Arbor, Keokuk, &c. This will certainly be the result, so long as it remains true that a large majority of those who study medicine are young men of very limited pecuniary resources. If the Faculties of the several schools were the only parties affected by the result predicted, we might regard the matter with indifference. But the interests of the profession at large, and of the whole community, are quite as deeply involved as of those connected with the schools.

If it is true that hospital clinical instruction, directly at the bedside of the sick, constitutes a very important and valuable part of medical education, and renders the student receiving it much better prepared to discharge the practical duties of his profession, then certainly it is desirable that students should be enabled to attend such schools as have ample facilities for that kind of instruction; and every measure that tends to prevent this by inducing them to resort to colleges in small towns where no true clinical instruction can be given, is positively injurious both to the profession and the community.

There are good reasons why medical teaching in large cities with good hospitals should be actually cheaper than in country towns. In the first place, the several Professors reside in the city where the college is located, and in giving their courses of instruction they are neither required to pay traveling expenses, extra board, nor be separated for three or four months each year from their regular field of practice, as is often the case with at least a part of those occupying chairs in country schools. In the second place, the additional reputation, and consequent practice, which is given to a man of talent and industry by a position as teacher in a medical college located in a populous city, more than compensates him for the time actually required to give the course of lectures assigned to him. This is especially true of those occupying the chairs of pathology, practical medicine, surgery, and midwifery. Hence those occupying such

positions in a large city could much better afford to give their several courses of instruction free, than to do the same work in a small town, and receive therefor a salary of $1,000 or $1,500 per annum. Physicians and surgeons of the highest order of talent accept with avidity appointments as attendants on public hospitals and dispensaries where their services are to be given entirely gratuitous, simply because the additional reputation and influence gained thereby, more than compensates them for the loss of the time required in the performance of their official duties. We see no reason why the same principle does not apply, with equal force, to those occupying places in public colleges, as to those attending public hospitals. We repeat, therefore, that the Faculties of colleges located in large cities, where all the facilities for acquiring a full and practical medical education are at command, *can afford* to make their *lecture fees* actually less than the Faculties of colleges located in small towns can possibly do. And if this course could be adopted practically, it would speedily concentrate all the medical students of our country in the colleges and hospitals of the larger cities, much to the advantage of the educational interests of the profession. We make these suggestions, not as the representative of any medical college, either in Chicago or elsewhere, but simply as an independent journalist. The lecture fees in the Chicago Medical College, with which we are connected, are higher than in any other medical college west of Ohio and north of St. Louis; and with the exception of the medical department of the University of Michigan, its lecture term is one full month longer. And we presume its Faculty will cheerfully advance still further, both in lecture fees and length of term, whenever neighboring colleges will come up to their present standard.

Chicago Medical Society:—Discussion on the Pathology and Treatment of Cholera.—The attention of the Chicago Medical Society, during several of its recent meetings, has been occupied with the subject of Epidemic Cholera. The discussion of the subject was opened by Dr. N. S. Davis, the substance of whose remarks are given among the original articles in the present number of the Examiner.

The discussion has been participated in, to some extent, by a large proportion of the members of the Society, and has been attended with considerable interest. Dr. JOHN BARTLETT gave a very interesting account of the numerous experiments resorted to in the treatment of cholera patients, in a cholera hospital in Louisville, Ky., during the prevalence of the former epidemic. Among these experiments were hot-air lime baths—injections of various substances into the veins (in one instance after injecting into the veins nearly two quarts of fluid, it began to run from the mouth as fast as injected)—mechanically plugging the anus —application of a very large cup over the epigastrium to prevent vomiting (as mentioned by CELSUS)—the giving of teaspoonful doses of calomel—and in the cases of two children, chloroform was given in doses of a teaspoonful every two hours. One of them died and the other recovered. As might have been expected, under such a series of experimentation, founded on no rational pathological ideas, nearly all the patients died.

Dr. MARGUERAT explained the pathology of cholera, as recently given by Dr. JOHNSON, of London, who claims that the active phenomena of the disease depend directly or indirectly on tonic spasm of the arteries, more especially of the branches of the pulmonary artery, by which the blood is prevented from reaching the pulmonary capillaries freely, and is accumulated in the right cavities of the heart and the large veins connected therewith. The blood, thus shut off from access to the lungs, not only fails to be properly oxygenated and decarbonized, but the venous fulness extends to the portal vein with its intestinal capillaries, thereby inducing the serous effusions into the alimentary canal. Dr. MARGUERAT thought this theory of arterial spasms not only afforded an explanation of the symptoms of cholera, better than the views presented by Dr. DAVIS, but it also explained why stimulants had so generally proved unavailing or positively injurious in the treatment of the disease, while blood-letting, laxatives, and anæsthetics had often proved beneficial, as shown by the results of such practice, especially in the East Indies. On this theory, not only are all stimulants injurious, but, also, all astringents and opiates that tend simply

to suppress the excessive serous evacuations, for such evacuations, in addition to relieving the congested portal system of vessels, also aided in the elimination of the cholera poison. The collapse and death are owing to the failure of blood in the arterial side of the vascular system, and not to the exhaustion of the watery element of the blood by the quantity of discharges. It was also claimed that the theory of spasm was further supported by the alleged fact that, after death, the lungs were generally found pale, bloodless, and compact; the left cavities of the heart empty or nearly so, while the right cavities are over-distended.

Dr. J. P. Ross had listened with much interest to the remarks of Dr. Davis, in opening the discussion, and thought the pathological views presented more plausible than any he had before heard, but inquired whether strychnine did not act more directly on the cerebro-spinal nervous system than the ganglionic, of which the nervo-vascular was a part.

Dr. Lowry, while a student in the Montreal General Hospital, under the direction of Dr. Frazer, saw strychnine used in a considerable number of cases of cholera, during the epidemic of 1854. From the twentieth to the sixteenth of a grain was given in the active stage of cholera every five or ten minutes, until its specific effects began to be visible, and then discontinued. Out of 20 cases thus treated in the hospital, only 4 died.

Dr. Groesbeck stated that during the cholera epidemic of 1854, he gave extract of nux vomica, in the form of pill, with much apparent benefit.

Dr. C. G. Paoli had seen much cholera during the years 1853–4. He regarded the pathological views presented by Drs. Davis and Marguerat as developing nothing new, but were essentially the same as had been promulgated many years since, by different writers. He also claimed that alcoholic stimulants were capable of increasing animal heat, and, therefore, when properly administered, were useful in the treatment of the disease under consideration.

Brief remarks were also made by Drs. Peterson, C. G. Smith, E. L. Holmes, A. Fisher, and D. M. Tucker.

Dr. Holmes, more especially called the attention of the Society to the efficacy of applying external warmth and irritation, by surrounding the patient with hot bricks wrapped in cloths saturated with mustard water.

Dr. C. G. Smith had used mustard applications extensively, but not in the mode recommended by Dr. Holmes. He had also practised, in a few cases, the thorough application of the cold dash or affusion. The patient having been stripped and placed in a tub, had one or two pails full of cold water suddenly dashed over the whole surface, then thoroughly rubbed and wrapped in warm, dry blankets. In patients not anæmic or debilitated previous to the attacks of cholera, he thought the practice beneficial.

Dr. Davis, in reply to questions that had been asked during the discussion, stated that the action of strychnine, though manifested plainly on the cerebro-spinal nervous centres, was by no means limited to them, but was exerted efficiently on the tonicity of the whole muscular system of tissues, whether voluntary or involuntary. In relation to the theory of arterial spasm, spoken of by Dr. Marguerat, he said it wholly failed to explain the symptoms of the first or initial stage of the disease, as well as many of the important changes during its progress. If contraction of the branches of the pulmonary artery, so as to impede the access of blood to the lungs, constituted an essential pathological condition in cholera, then a sense of suffocation, or want of breath, with disturbance of the heart's action, and fulness of the subclavian and jugular veins, should precede and accompany the initial stage of diarrhœa that ushers in nine out of every ten attacks of cholera. And yet the closest scrutiny has failed to detect the presence of such symptoms in that stage of the disease. It is only when the disease has continued until the stage of collapse is near at hand, that the sense of oppression and want of air, with irregular action of the heart, become prominent symptoms; thus showing their dependency on changes taking place during the progress of the disease, instead of on primary pathological conditions.

Again, he said, contraction or spasm of the pulmonary arter-

ies sufficient to impede the flow of blood to the lungs, ought to disturb the cerebral circulation and functions, through fulness of the descending vena cava and its branches, as directly and speedily as those of the abdominal viscera. Yet there is no other disease of equal rapidity and severity, in which the cerebral functions remain so little disturbed during all the early stage. That mere portal congestion has but little to do with cholera, is logically inferable from the fact that none of the well known causes of such congestion give rise to any of the important phenomena of cholera. Thus, hepatic inflammation, enlargement, and cirrhosis, all cause more or less obstruction to the portal circulation, but induce none of the distinctive symptoms of cholera. In relation to the *post mortem* appearances, he would caution members of the society against the common error of confounding the pathology of a disease with its pathological anatomy; the one related to the nature of the disease, *ab initio*, the other to its final results. He said it was true that in many cases terminating fatally during the stage of collapse, the lungs had been found pale, or indicating the presence, in the pulmonary capillaries, of less blood than natural; but the same appearances were seen quite as often in the mucous membrane of the stomach and intestines, and in the same cases. Yet he presumed no one who had witnessed the amount of discharges from the alimentary canal during life, would have imagined for a moment that the blood had been shut off from that canal by spasm of the vessels supplying it. In regard to inferences to be drawn from the effects of blood-letting and evacuents, he thought them very unreliable. First, because it is by no means established that either blood-letting or other evacuents are generally beneficial in the treatment of cholera. During previous epidemics of cholera, he had bled several patients. In some it appeared to lessen the urgent symptoms, and in others it produced no apparent effect. Some members of the Society, as well as some writers, talk freely of bleeding in the stage of collapse; but according to his observation, bleeding from the arm in true collapse is impracticable, simply because the blood will not flow in sufficient quantity to produce

any effect. When it can be made to flow in sufficient quantity, the apparently beneficial effects are more rationally explained by the diminished viscidity of the blood, and the increased absorption by the systemic capillaries, which the direct abstraction of blood from the veins is known to produce, than by any supposable relaxing influence over arterial spasm. In regard to the anæsthetic effects of chloroform, in the stage of collapse, or great exhaustion, he said it must be remembered that the experiments of W. A. HAMMOND, and others, had demonstrated the fact that chloroform, inhaled, directly increased the fulness of the vessels of the brain, which would explain the temporary benefits of that agent in the stage of disease when that organ was being rapidly drained of its ordinary supply of blood.

The Society adjourned, leaving the subject still open for further discussion.

MERCY HOSPITAL.—This institution, located on the corner of Calumet Avenue and Twenty-Sixth Street, having been relieved of the pauper class of patients, by the opening of the County Hospital, presents now the best hospital accommodations that can be had in Chicago. It is pleasantly located, its rooms cleanly and well ventilated, and its several departments under the care of able and experienced members of the profession.

The ward set apart for the treatment of diseases of females and lying-in women, is under the care of Prof. W. H. BYFORD; the wards for surgical patients, are under the care of Prof. E. ANDREWS; the wards for medical patients and the apartments for single patients, are under the care of Professors N. S. DAVIS and J. S. JEWELL. Patients laboring under diseases of the eye and ear are as readily admitted and as well treated as any other class. Instead of depending on the care of a corps of hired nurses, the whole internal or domestic affairs of the Hospital are under the immediate care of the Sisters of Mercy, whose faithfulness and zeal in caring for, and sympathizing with, the sick is everywhere acknowledged. Clinical instruction is given in the institution, from 1 to 2 o'clock P.M., on Monday, Tuesday, Thursday and Friday of each week.

Deaths.—At the last annual meeting of the American Medical Association, we were forcibly impressed with the fact that the men who were in the vigor of manhood, and leading workers in the profession twenty years since, were rapidly disappearing from the stage of action. But that impression has been painfully deepened by the occurrences of the few months which have intervened since the pleasant gathering in Boston.

Of all those who took an active interest in the organization of the American Medical Association, and continued to retain that interest unabated, none were more faithful or more highly esteemed than Drs. Thomas W. Blatchford, of Troy, N. Y.; James Couper, of Newcastle, Del.; L. A. Smith, of Newark, N. J.; and D. L. McGugin, of Keokuk, Iowa. But in quick succession they have closed up their earthly labors and entered upon their heavenly reward.

They were each useful citizens, good Christians, eminent physicians, and strong pillars in the social and professional circles in which they lived. Their familiar faces and cordial greetings will be sadly missed at the coming National gathering in Baltimore, on the first of May. But their memories will long be cherished by all who knew them.

Diseases of the Eye and Ear in the County Hospital.—We learn, with pleasure, that the managers of the Hospital for the County poor in this city, have set apart special wards for patients laboring under diseases of the eye and ear, and have appointed Dr. Joseph Hildreth, formerly Surgeon to the Desmarres Eye and Ear Hospital, to take charge of the same. The appointment is a good one, and will result in having, not only full justice done to that class of poor patients, but will also add a very valuable item to the means for clinical instruction in our city.

Graduates.—In the list of Graduates at the recent Commencement of Chicago Medical College, in the March number, the name of Wm. E. Turner was accidentally omitted. Dr. Turner graduated with credit to himself and the College.

Disease of the Eye, Connected with a Diseased Tooth. —Dr. Hildreth's case, published in the original department of this number of the Examiner, was previously published in the *Dental Journal*, at Cincinnati, but was furnished to us, with a few additional lines, by the author.

London Lancet.—The March number was promptly issued, and contains a continuation of the Lectures on Dyspnœa, by Dr. Hyde Salter; on Puerperal Fever, by Dr. Robert Burnes; and on the Progress of Medicine during the last three centuries, by Dr. W. H. Dickinson; together with the usual variety of interesting and important articles.

AMERICAN MEDICAL ASSOCIATION.

The Seventeenth Annual Session will be held in the City of Baltimore, on Tuesday, May 1, 1866.

The following Committees are expected to report:—

On Prize Essays, Dr. Austin Flint, Sr., N.Y., Chairman.

On Quarantine, Dr. Wilson Jewell, Pa., Chairman.

On So-called Spotted Fever, Dr. Jas. J. Levick, Pa., Ch'n.

On Ligature of the Subclavian Artery, Dr. Willard Parker, N.Y., Chairman.

On Tracheotomy in Membranous Croup, Dr. Alex. N. Dougherty, N.J., Chairman.

On Rank of Medical Corps in the Army, Dr. C. S. Tripler, U.S.A., Chairman.

On Rank of Medical Corps in the Navy, Dr. T. L. Smith, N.Y., Chairman.

On Medical Literature, Dr. C. A. Lee, N.Y., Chairman.

On Medical Education, Dr. Samuel D. Gross, Pa., Chairman.

On American Neerology, Dr. C. C. Cox, Md., Chairman.

On Patent Rights and Medical Men, Dr. David Prince, Ill., Chairman.

On Alcohol and its Relations to Man, Dr. Gerard E. Morgan, Md., Chairman.

On Insanity, Dr. Alfred Hitchcock, Mass., Chairman.

On Milk Sickness, Dr. Robert Thompson, Ohio, Chairman.

On the Relation which the Doctrine of the Correlation and Conservation of Forces bears to the Physiological and Pathological Condition of the Human System, Dr. S. L. Loomis, D.C., Chairman.

On the Progress of Medical Science, Dr. Jerome Candee Smith, N.Y., Chairman.

On Diphtheria, Dr. H. D. Holton, Vt., Chairman.

On the Comparative Value of Life in City and Country, Dr. Edw. Jarvis, Mass., Chairman.

On Drainage and Sewerage of Cities in their Influence on Health, Dr. Wilson Jewell, Pa., Chairman.

What Effect has Civilization on the Duration of Human Life, Dr. Augustus A. Gould, Mass., Chairman.

On Disinfectants, Dr. E. M. Hunt, N.J., Chairman

On Compulsory Vaccination, Dr. A. Nelson Bell, N.Y., Ch'n.

On Strangulated Hernia, Dr. W. F. Peck, Iowa, Chairman.

On the Causes and Pathology of Pyæmia, Dr. J. J. Woodward, U.S.A., Chairman.

On the Use of Plaster of Paris in Surgery, Dr. Jas. L. Little, N.Y., Chairman.

On the Etiological and Pathological Relations of Epidemic Erysipelas, Spotted Fever, Diphtheria, and Scarlatina, Dr. N. S. Davis, Ill., Chairman.

On Meteorology, Medical Topography, and Epidemics, Drs. J. C. Weston, Me.; P. A. Stackpole, N.H.; C. L. Allen, Vt.; A. C. Garratt, Mass.; C. W. Parsons, R.I.; B. H. Catlin, Ct.; E. M. Chapman, N.Y.; E. M. Hunt, N.J.; D. Francis Condie, Pa.; T. Antisell, D.C.; O. S. Mahon, Md.; T. M. Logan, Cal.; R. C. Hamill, Ill.; J. W. H. Baker, Iowa; Abm. Sager, Mich.; J. W. Russell, Ohio.

WM. B. ATKINSON.
Permanent Secretary, Philadelphia.

Mortality for the Month of February.—The following report of the health-officer gives the mortuary statistics for the month of February. From this report it will be seen that the increase in the number of deaths last month over the number in the corresponding month of last year is only 4; the whole number of deaths during last month having been 260, and during the corresponding month of last year 256. It is very gratifying to notice that not a single case of small-pox occurred during last month, while during the month of February of last year there were 17. That dread and ever-increasing disease, to which modern habits of life seem to be leading us more and more, consumption, took off its usual heavy quota, 17, being the largest number of victims to any one disease during the month.

Still, on the whole, the mortality report for last month, when the increased population is taken into consideration, shows a

favorable state of health in the city, when compared with previous years, and especially when compared with last month, during which the deaths numbered 293. There is a decrease in the number of those who died over 50 years of age from the number of the corresponding month of last year, of 5; the number over 50 years of age last month, being 23, and of the corresponding month of last year, 28. The number of children under five years of age who died during last month was 117, and the number who died during February of last year, 107.

DISEASES.

The following table shows the causes of death and the number of each:—

Accidents,	8	Heart Disease,	6
Brain Fever,	2	Hemorrhage,	2
Bilious Fever,	1	Intemperance,	1
Congestion of Brain,	1	Intermittent Fever,	1
Congestion of Lungs,	4	Inflammation of Brain,	3
Colds,	6	Inflammation of Bowels,	2
Cancer,	5	Inflammation of Lungs,	5
Consumption,	17	Lung Fever,	9
Cramps,	9	Nervous Fever,	1
Croup,	18	Rheumatism,	1
Convulsions,	11	Spasms,	3
Childbirth,	12	Suicide,	1
Cerebro-Spinal Meningitis,	3	Stillborn,	11
Colic,	1	Scarlet Fever,	12
Cholera-Morbus,	1	Suffocation,	3
Congestive Chills,	3	Old Age,	9
Decline,	2	Pneumonia,	4
Diphtheria,	11	Paralysis,	1
Delirium Tremens,	1	Phthisis,	1
Dropsy,	11	Typhoid Fever,	11
Dysentery,	1	Teething,	4
Diarrhœa,	5	Whooping-Cough,	2
Disease of Kidneys,	1	Water on Brain,	2
Disease of Liver,	3	Worms,	1
Diabetes,	1	Unknown,	25
Erysipelas,	1		
Fever,	1	Total,	260

Ages of the Deceased.—Under 5 years, 107; over 5 and under 10 years' 28; over 10 and under 20, 12; over 20, and under 30, 20; over 30 and under 40, 31; over 40 and under 50, 20; over 50 and under 60, 9; over 60 and under 70, 6; over 70 and under 80, 5; over 80 and under 90, 3; stillborn 11; unknown, 8. Total, 260.

NATIVITIES.

The following table shows the nativity of the deceased:—

Chicago,	142	Canada,	4	Unknown,	12
Other States,	33	Ireland,	30		
England,	8	Scotland,	1	Total	260
Germany	27	Sweden,	1		
France,	1	Poland,	1		

COMPARATIVE STATEMENT.

The following is a comparative statement, showing the number of deaths in each division of the city for the months of February in 1865 and 1866:—

February, 1865.		February, 1866.	
North Division,	61	North Division,	55
South Division,	101	South Division,	94
West Division,	94	West Division,	111
Total,	256	Total,	260

Annual Report of the Insane Asylum of California. —The 13th Annual Report of the State Asylum is before us. It contains no less than four reports from physicians—one from Drs. Whitney and Morse, majority of the Visitors, a minority report from Dr. Hubbard, the report of Dr. Shurtleff, Resident Physician, and that of Dr. Tilden, late Resident Physician. We cannot pretend to analyze these papers, or even to notice them severally. The new building which accommodates 125 female patients, is highly praised as beneficial in itself and also in the relief it gives to the main building, by depleting it of its crowded population. In the majority report of the Visitors, the unfitness of the locality, from the malarious nature of the country and other causes, is appropriately set forth. Dr. Shurtleff is complimented in both reports for his qualifications as Resident Physician. His report is interesting and practical, though it strikes us as decidedly rose-colored in regard to the curative value of the institution. On comparison with thirteen of the Eastern Asylums, the Stoeton institution, though for the most part so crowded as to render proper treatment absolutely out of the question, presents a percentage of 51 cures in 14 years, against an average of about 45 per cent. in the Atlantic States. This is a very different result from that which we had been led to expect. If our Asylum can thus take the lead in curativa power without proper accommodations, what would it not accomplish if suitably equipped? Less than five per cent. of the patients discharged as recovered have been returned. This is a very small proportion. Of the deaths in the last year, 28 per cent. were from pulmonary consumption, and the same number precisely from general paralysis. There were 632 inmates at the date of report, 462 of whom were males and 170 females. Admitted during the year 268, viz.: 190 males and 78 females. Increase of insane patients about 50 per year. Ratio of mortality one to eight.—As to the causes in 149 cases, as stated in the commitments, 34 are ascribed to

masturbation—more than double the number from any other single cause. Nine cases are allotted to disappointment in love, 13 to pecuniary trouble, 8 to domestic trouble, and 13 to the influence of various other mental afflictions, making 43 in all, or more than one-fourth the whole number, from causes of especial potency on this coast. A sad story is this! No less than 16 cases are set down under the ambiguous head of "religion," and 3 under spiritualism. It is quite refreshing to note even one case of insanity in a female from "absence of husband," though we look in vain for "absence of wife" as a cause. "Disappointment in love" goes harder with men than women, in the proportion of 6 to 3, while "jealousy" crazes two females without perturbing any of the sterner sex. "Meningeal irritation" and "illness" are rather indefinite terms in this relation, and "quinine given to the mother while nursing," is a very unsatisfactory statement. We suppose, however, that under the circumstances in which the commitments are made in various sections of the State, it is not practicable to procure a more technical and rational account of the etiology of insanity.—*Pacific Med. & Surg. Jour.*

Treatment of Asiatic Cholera.—Perhaps the most remarkable form of treatment which has been employed in past epidemics of cholera, and reported as being successful, is the strychnia and oleum terebinthinæ treatment, a report of which may be found in the *Transactions of the American Medical Association*, vol. v., page 441, being part of the Report on the Epidemics of Ohio, Indiana, and Michigan, by Dr. G. Mendenhall. The treatment was practised in 1850, in the Commercial Hospital, Cincinnati.

I read from the report referred to:—"The following prescription was first tried (in the Commercial Hospital) by Dr. Howes, one of the resident physicians, under whose administration it was continued by the consent and advice of Prof. Edwards, the attending physician at the time, both of them concurring in its propriety. ℞. Strychniæ gr. ss.; ol. terebinth., f℥ij.; mucil. acaciæ, f℥viij. M. Dose—one tablespoonful, to be repeated every half-hour, until the discharges ceased and perfect reaction occurred. In some of the worst cases, the dose was repeated every fifteen minutes. In one case, the amount named in the above prescription was renewed seven times (equal to $3\frac{1}{2}$ grains of strychnia) and given in the course of forty-eight hours. In one case only were the poisonous effects of the strychnia observed; in this case, Ojss. of the mixture (equal to $1\frac{1}{2}$ grains

of strychnia) was administered in the course of sixteen hours, and quite severe tetanic spasms were produced, which were, however, relieved in a short time by chloroform inhalations, and the patient recovered

"The number of cases of cholera treated in the hospital during the year was fifty-seven. Seventeen of these were submitted to a treatment consisting mainly of the exhibition of calomel, camphor, morphia, &c. The conditions and results were as follows:—

In collapse (pulseless at the wrist),	8 ;	recovered,	0
In approaching collapse,	8 ;	"	3
In early stage,	1 ;	"	1
	17;	"	4

"Forty cases were submitted to what is called 'strychnia treatment;' the condition and results were as follows:—

In collapse (pulseless at the wrist),	12 ;	recovered,	2
In approaching collapse,	20 ;	"	18
In early stage,	8 ;	"	8
	40 ;	"	28

"Six of the fatal cases reacted perfectly under the strychnia and turpentine, and died of consecutive fever."

In fairness to the "strychnia treatment" I have to state, that all of the accounts that I have met with in regard to it in the hands of other physicians than those of the Commercial Hospital, do not sustain its utility.—*Boston Med. & Surg. Rep.*

The Therapeutic and Physiological Action of Digitalis.—1st. That digitalis will stimulate and strengthen a weak heart, and that the weaker the muscular tissues of the heart the safer will be the administration of the medicine.

2d. That in hypertrophied heart it will fail to reduce the pulse either in frequency or strength, and in such cases will prove dangerous.

3d. That in a weak organ, acting because of its weakness with great rapidity, it will reduce the number of its contractions, and, as it were, strengthen or tone them down. To strengthen and quicken the action of a weak, slowly-acting heart, and to reduce the number of the rapid strokes of a feeble heart is according to Dr. Anstie, to do the work of a true stimulant, bringing action up to the normal standard on the one hand, and reducing it to that level on the other.

Thus it appears that the *physiological* action of digitalis is that of a stimulant, in Dr. Anstie's sense of that term; and that in its *therapeutic* properties it is especially useful in cardiac weakness, whether that weakness be accompanied by extremely slow or extremely rapid action. Further its physiological action as a stimulant may be explained by supposing that in the case of the slow heart it improves the molecular arrangement of the sarcous elements, or that it excites the nerve centres from which the nervous power of the heart is derived; and in the case of the weak but rapid heart, it acts by strengthening that regulating or restraining (vital) influence which, while maintaining the activity of the tissues at a normal rate, checks undue and riotous action in the same (Radcliff). Lastly, let me say that as a diuretic it is at once the safest and best we possess, and the dose may vary from ten drops to a half an ounce. This very day I have given nearly half an ounce in fifteen-drop doses every two hours to a child three years old, and by so doing have subdued a rapidly-developing general dropsy, which threatened the little sufferer's life.—*London Med. Times & Gaz.—Boston Med. & Surg. Jour.—Cincinnati Lancet & Observer.*

An Italian physician has recently discovered a remedy for certain forms of neuralgia. Attributing the obstinacy of the disease (trifacial neuralgia) to the variations of temperature so frequent in Sicily, he adopted the expedient of covering all the painful parts with a coating of collodion containing a certain portion of hydrochlorate of morphine. This treatment was perfectly successful; the relief was instantaneous and permanent, and the coating fell off in the course of one or two days.—*Medical & Surgical Reporter.*

Dr. James P. White, of Buffalo, has sailed for Europe, with the intention of being abroad for eighteen months.

M. Jobert de Lamballe, a distinguished surgeon, well known to students of Medicine visiting Paris, is suffering from mental derangement, and is confined in a Lunatic Asylum.

Dr. T. G. Thomas has been elected to fill the Chair of Obstetrics in the College of Physicians and Surgeons of New York, rendered vacant by the death of Prof. C. K. Gilman.—*Cincinnati Lancet & Observer.*

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THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., Editor.

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Original Contributions.

ARTICLE XVI.

A NEW THEORY OF THE ORIGIN OF "DUMB-BELL" CRYSTALS.

By D. W. FLORA, M.D., Chicago, Ill.

It is proposed to open the discussion, by giving the history of a case which fell under my treatment, about one year ago, in which the urine of the patient contained abundance of the crystals in question, in common with the oxalates of lime.

The observations made in this case from day to day, led me to doubt the existence of the "dumb-bell" as a primary form of crystallization, and to ascribe its occasional appearance to mere accident depending upon changes produced by the accidental union of other crystals.

CASE OF DYSPEPSIA WITH OXALURIA.

S. C., *æt.* 32 years, a private of Co. F., 13th Mich. Volunteer Infantry, was admitted to Madison U.S. General Hospital Dec. 1st, 1864. On admission, the patient appeared somewhat cachectic, and had dyspeptic symptoms, with obstinate constipation. ℞. Pil. cath. comp., No. iij., to be followed by Seidlitz pulv. every hour, till bowels move. To keep the bowels in a soluble state, fl. ext. rhei, ʒj. was ordered daily.

Dec. 12th.—Patient seized with a tertian ague, which readily

yielded to sul. quinine. An ulcer on the left leg, over the spine of the tibia, was noticed about this time to be in an indolent condition. This ulcer occupied the site of a previous bruise.

Dec. 19th.—Constipation still continues, and the ulcer inclines to spread. The spittoon by the patient's bed was observed to be filled with rejected food after meals, which the patient stated was thrown from the stomach immediately after being swallowed. He was taxed with voluntary vomiting, which he stoutly denied.

Jan. 20th, 1865.—The vomiting still continues. He was put upon raw beefsteak, cut into fine cubes, ℥iij. daily. No fluids allowed. *Jan. 30th.*—No change. Smoked ham was then substituted for the raw beef, but with no better results. *Feb. 1st.*—About this time, the patient complained of pain and tenderness in the renal region, with frequent desire to micturate. The urine was rather abundant, of a deep straw color, or light gamboge. The reaction was slightly acid—sp. gr. 1022. On cooling, a dense precipitate was formed, equal to one-fourth the whole bulk. This cleared up under the influence of heat, and also readily on the addition of nitric acid. A drop placed upon a glass slide, and allowed to crystallize spontaneously, presented the appearance seen below. The *urates* were undoubtedly present, as were also deposits of epithelium and uriniferous casts. The octohedral crystals of oxalate of lime were seen in myriads, many of them exceedingly minute.—Stellate crystals, composed of numerous fine prisms arranged around a common centre, were also numerous, as may be seen by reference to the drawing. A large cruciform crystal was occasionally to be seen in the field. *"Dumb-bells" were sought for in vain!* The stellate crystals were undoubtedly *urates*,

Fig. 1. Appearance on first Examination.

but whether of ammonia, soda, or potash, I was, at the time, unable to make out.

These stellates are the crystals which are hereafter to figure as "dumb-bells." This first specimen was carefully set aside, still under the field of the microscope, and twenty-four hours afterwards a *second* examination was made, when the stellate crystals, composed of the urates, showed a tendency to unite by solution or liquefaction of a portion of their discs. This is the *first step* in the formation of "dumb-bells," and it requires only a slight modification to complete the metamorphosis. By the pressure of fluids (for at this time rapid deliquescence of the crystals is taking place) upon the outside of the now united discs, the rim is forced inward upon itself at the point of least resistance, to wit:—at the point of junction of the two discs the radii being already dissolved at their points of contact. The prisms which formed the radii of the circles are now set afloat, and arrange themselves parallel to each other and in the direction of the long diameter of the "dumb-bell."

When examined again, say 30 hours after the first, the long-sought "dumb-bell" was discovered in the same field which had been twice explored unsuccessfully. [See Fig. 2.]

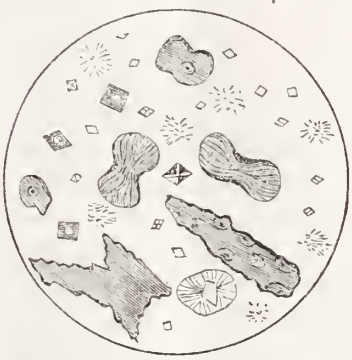

Fig. 2. Appearance on third Examination.

Such, in brief, is the history of the case which led to a series of investigations, and the adoption of the theory of "dumb-bells," which it is the object of this paper to elucidate. It may be added, that this man was discharged from the service of the Government four months after admission, no improvement having been observed in his condition. Before leaving the hospital, he boasted to his nurse that he "had played his game successfully, as his vomiting had all been produced voluntarily." If his admission be true, it is a remarkable case, exhibiting all the aggravated symptoms of *dyspepsia*

as cachexia, oxaluria, etc., brought upon himself and maintained during a period of four months, by persistent voluntary rejection of his food.

I shall take the liberty to refer to a case now under treatment, in which the urine is acid when first examined, and contains the *urates*, as well as the *oxalates*, in great abundance. The deposits have been more thoroughly and carefully examined than in the preceding case, and have given almost precisely similar results. On the fourth or fifth day, a final examination was made, the results of which very nearly resembled the appearance figured in Dr. GOLDING BIRD'S work on Urinary Deposits, in which he intends to represent one phase of the "dumb-bell" crystals. The forms referred to appeared at a time, and under circumstances, which leave no doubt on my mind that they are the last which these crystals (dumb-bells) take, previous to their entire liquefaction.

Although it is not incumbent on me to prove the exact composition of these crystals in question, in order to sustain my theory, yet a brief resumé of the opinions of some prominent authors on this subject may not be out of place.

GOLDING BIRD says:—"It is well known that all crystals, referable to the cube or regular octohedron, never possess double refraction, and, hence, scarcely exert any influence upon a plain polarized ray of light. In accordance with this law, the ordinary crystals of oxalate of lime do not, in the slightest degree, exhibit the phenomena of color when examined in the polarizing microscope, merely in the slightest degree, if applied in a favorable position, appearing to be illuminated when the polarizing prisms are crossed. On the other hand, the dumb-bells, as I long ago stated, exhibit a beautiful series of colored rings traversed by a black cross." After detailing several experiments with these dumb-bells, he says:—"We may safely conclude that they do not consist of mere oxalate of lime, for their powerful action on polarized light is quite incompatible with their being composed exclusively of this salt. The action of heat shows that they are readily converted into carbonate of lime without change of form." In conclusion, the same author

says:—"I think we may venture to assume the high probability of these crystals (dumb-bells) consisting of the oxalurate of lime."

Dr. HASSALL, in the *British and Foreign Medico-Chirurgical Review*, remarks:—"That soluble dumb-bells in the urine frequently consist of sulphuric acid in combination with soda or potash."

Dr. OTTO FUNKE, in his beautiful micographic work on urinary deposits, has figured and described these crystals as composed of the urates of soda.

Dr. BACON, in the *American Journal of Medical Sciences*, for April, 1851, is inclined to regard the oval crystals shown in my last drawing, as "dumb-bells seen endwise." He dissolved them in strong acetic acid, and on spontaneous evaporation they presented abundance of zeolitic crystals, from "*circular striated plates* to *dumb-bells*."

This experiment strengthens the position taken in this essay, for unless this "zeolitic arrangement" is present, unless we have the "circular striated crystals," we *cannot have dumb-bells!*

In regard to the ultimate composition of the dumb-bell, my friend F. MAHLA, Professor of Chemistry in Chicago Medical College, has long held that they are *not* oxalate of lime, and he is further inclined to refuse them a place among *primary* crystalline forms. These crystals have never been observed by me in any other than *acid* urine, in which *urates* were undeniably present.

If the theory here advocated be correct, it is impossible for them to appear in *alkaline* urine, and this is verified in the case which we now have under examination. As soon as the urine became alkaline, by the evolution of ammonia, (the octohedral crystals of oxalate of lime being still present,) the "dumb-bells" disappeared altogether, and were replaced by a copious deposit of the *triple phosphates*.

There are six different geometrical forms to which *all* crystals may be referred, and it would require a great stretch of the imagination to perceive any similarity in the "dumb-bell" to *any* of these forms or their modifications.

The "circular or stellate" crystals, which we regard as the originators of the "dumb-bell," are themselves *secondary* forms, the result of an arrangement of needle-shaped prisms around a common centre. From whence it follows that our famous "dumb-bell," about whose composition there has been so much discussion, and such wide differences of opinion, is only an *accidental* and *tertiary* form, the result of *accident* merely!

Cottage Grove Avenue.

ARTICLE XVI.

PRACTICAL REMARKS ON BLOOD-LETTING.

By D. B. TRIMBLE, M.D., Chicago, Ill.

In continuation of the subject of the application of blood-letting in the treatment of diseases, I propose, next, to take up those affecting the circulatory system.

In this class will be enumerated the diseases of the heart and its membranes; those of the arteries, and veins; and those of the blood: to which this treatment is applicable.

1st. DISEASES OF THE HEART.

In the inflammatory affections of the heart, blood-letting, both general and local, is frequently required: and the different phlegmasiæ affecting this organ being very frequently combined, and the treatment that is applicable to one, to some extent, being applicable to all, it may be supposed that they should be considered under one head; but as they do, frequently, occur separately, and often arise from different causes, it is safer to state the treatment of each disease separately.

Pericarditis.—On the Etiology of this disease, in a very great degree, depends the propriety or impropriety of bleeding. If an idio-pathic affection (which is very rarely the case), free venesection will generally give prompt relief, and if followed by other proper remedial measures, including, if necessary, leeching, a speedy and perfect cure may be reasonably expected. If

of rheumatic origin, prompt and free venesection is also demanded. This may be the more freely resorted to, if the pericarditis occurs simultaneously with the rheumatism, than if appearing after the patient had been previously affected. Venesection is the better borne in the cases arising from this cause, as the patients are generally young and robust. But even when of rheumatic origin, this remedy should not be too freely resorted to, for, as Dr. WALSHE, in his treatise on Diseases of the Heart, says—"Bleeding from the arm cannot be pushed to any notable extent, without the risk of inducing syncope—an occurrence of serious danger when already the heart's vigor is dynamically and statically impaired." "Very copious depletion, particularly in some constitutions, excites the heart greatly;" but yet he says "Moderate venesection shortens the duration of pericarditis, and does so more effectually the earlier it is employed." He recommends the abstraction of eight to twelve ounces in this way, and "if well supported, followed by the abstraction of six or eight ounces more, by cupping or leeching over the heart." Professor FLINT, in his work on the same subject, says that a person in "fair health," affected with pericarditis from either of the above mentioned causes, is a proper subject for blood-letting at the commencement of the disease. The immediate effects of bleeding are, relief to the pain and dyspnœa, and diminished force and less irregularity of the heart's action: the ultimate effects, if successful, the prevention of effusion into, and adhesion of, the pericardium, and restoration to health. But a large number of cases of pericarditis arise from other causes, and generally of a debilitating character, which contra-indicate the use of blood-letting in many cases, and should induce more caution in all. Among these causes may be enumerated prostration from previous disease, intemperance, anæmia, and albunimuria. The last mentioned is a frequent cause of pericarditis, and as it occurs generally in those advanced in life, bleeding should be dispensed with. Where effusion has taken place, it is also useless and improper to bleed. In chronic pericarditis, where a congested condition of the pericardium exists, local depletion by leeching,

or cupping the left thoracic region, may be required, but in the majority of cases it is not necessary.

In *Endo-carditis*, bleeding is as necessary as in the preceding disease, and there is less caution necessary in its application, as there is not the danger of debility, or paralysis of the heart, from too much depletion, that there is in pericarditis. In endo-carditis we must not expect to find the severe pain in the left thoracic region that is symptomatic of pericarditis, for in this disease the pain is more obtuse, and frequently absent. On the other hand, the pulse, in the early stage, is even more frequent than in pericarditis, though failing more early. Congestion of the lungs, brain, &c., often occur in the course of the disease, calling for prompt and active treatment to obviate them. The same conditions of the system, and the same causes, as in pericarditis, modify and govern the treatment, in the same way, in endo-carditis.

In *Endo-Pericarditis*, the same treatment is required as in the preceding cases.

Carditis, or *Myo-carditis*, as an idio-pathic affection, is a very rare disease. It is almost always associated with inflammation of either its lining or investing membrane, or with both, and its symptoms are very obscure. Its treatment is almost identical. In bleeding, in these cardiac inflammations, we should have a reference, not only to the preservation of life, and restoration to health, but also to the prevention of their sequelæ; as abscesses, softening, induration, and aneurismal dilatation in myo-carditis; chronic valvular disease in endo-carditis; effusion and adhesion in pericarditis; hypertrophy in each, &c.

Hypertrophy of the heart, being a chronic disease, produced by other diseases, especially of the heart, bloodvessels, or blood; or by injurious habits of business or indulgence, does not require the free depletion that is necessary in the active cardiac inflammations. It is generally, though not always, associated with dilatation, and where the latter condition predominates, bleeding must be very cautiously, if at all, used. But in simple hypertrophy, or where this is in excess of the dilatation, especially if consequent upon inflammation of the heart, or its

membranes, plethora, rheumatism, or chronic valvular disease, then moderate venesection, repeated at intervals of a few weeks, and accompanied or followed by the use of cups or leeches, would greatly aid in the cure of the disease. When the blood is in an anæmic condition, it would be improper to adopt this practice. WALSHE prefers cupping or leeching over the præcordial region, to general bleeding; but FLINT advises general blood-letting, "when there exists over-repletion of the general vascular system, the object being, by lessening the mass of blood, to facilitate its circulation." The existence of plethora furnishes the indication for blood-letting, and the removal of this state constitutes the limit to which it may with propriety be carried. Carried beyond this limit, the detraction of blood can hardly fail to be pernicious." Injudiciously practised, blood-letting is injurious in proportion as it impoverishes the blood, and weakens the muscular power of the heart."

Chronic Valvular Diseases of the Heart are generally so far advanced before medical aid is called, that their cure is almost hopeless; but we can do much to retard their course. Their tendency is to produce hypertrophy and dilatation (as well as calcareous, cartilaginous, and other morbid deposits, in the valves), which greatly enhance their danger, and it is very desirable to obviate, or retard this effect. If, when this is the case, there is a plethoric condition of the system, with a flushed face, and full pulse, and the red globules of the blood in excess, moderate and occasionally repeated venesection, followed, if requisite, by local bleeding, will often give temporary relief, but should never be resorted to after the occurrence of dilitation. Some years ago I attended a lady with a valvular affection, of long standing, who, for months before her death, was unable to take the least exercise without producing severe dyspnœa; and the effort of walking across her room, at length induced her death. The condition of the heart, revealed by the *post mortem* examination, caused surprise that life should have been so long maintained. There was a large calcareous deposit in the aortic and semilunar valves, converting them into a substance like stone, and to a less degree, in the mitral valve.

In the *Functional Affections of the Heart*, though bleeding is not so necessary as in the preceding classes of disease, yet it will be occasionally required.

Palpitation, depending on a variety of causes, must receive various treatment; but if caused by plethora, and where the pulse is full and strong, bleeding is beneficial; or if produced by spinal irritation, cups or leeches, applied to the tender portions of the spine, will be found to aid in relieving it.

In *Angina Pectoris*, during the paroxysm, if the system is plethoric, and the pulse strong, blood may be taken freely from the arm, but this is not often required. In connection with this, or alone, local bleeding may be resorted to. WALSHE remarks—"If the patient be the subject of undoubted sthenic plethora, and especially if the heart be known, by previous examinations, to be a well-nourished one, the abstraction of blood from a vein, or cupping between the shoulder blades, is clearly indicated; but bleeding must not be needlessly undertaken, and without assurance as positive as attainable, that the heart is, at least, not a dilated, soft, or flabby one." In all cases attended by debility, a pale skin, or anæmia, it would be injurious.

2D. THE BLOODVESSELS.

In *Asteritis*, where the usual symptoms of inflammation are present, free venesection, followed by leeching along the course of the inflamed vessel, will, in most cases be demanded.

In *Aneurisms*, where there is a rich condition of the blood, with a strong, full pulse, and a plethoric habit, and especially if there is inflammation of any of the thoracic or abdominal viscera, venesection may be practised moderately, with a view of lessening the volume and momentum of the blood, thus relieving the distension of the diseased vessel, and giving it an opportunity to contract. If the phlegmasiæ of the thorax or abdomen attend the aneurism, local bleeding is often necessary. Though free and repeated venesection was advocated by writers on the subject, fifty or more years ago, yet later, and prominent authors, as STOKES, WALSHE, FLINT, &c., confine themselves to one or two moderate bleedings in any case, and in the majority of cases, dispense with it altogether.

In *Arterial Palpitation*, depending upon congestion, or irritation of the spine, or solar plexus, accompanied with a full and excited pulse, venesection may be employed, though generally not necessary. Cups or leeches applied to the spine, or in case of palpitation of the abdominal aorta, leeches to the epigastrium are more frequently required.

In the early stages of *Phlebitis*, venesection is occasionally beneficial, especially where the pulse is full and frequent. Leeches along the course of the inflamed veins should be freely applied, and repeated should the inflammatory symptoms continue. In *crural Phlebitis*, or *Phlegmasia Dolens*, they should be applied along the course of the femoral vein. They may also be applied over *varicose veins*, where inflammation exists.

3d. In some of the diseases of the *Blood*, bleeding is strongly indicated; in others, it is wholly inapplicable.

In *Plethora*, where it is only temporary, it is not generally necessary to bleed; but if active, or threatening congestion of the brain or lungs, it should be freely employed.

Purpura, arising from opposite conditions of the system, requires different modes of treatment, depending on the cause of the disease. In some cases, as far as my observation goes, almost always, it arises from inefficient sanguification, and causes which debilitate. In cases of this nature, depletion would be highly improper; but it sometimes occurs in the robust and vigorous, and when this is the case, accompanied by a full, strong pulse, especially if there should be inflammatory congestion of the abdominal or thoracic viscera existing at the same time we may resort to venesection. It has been known to occur in suppressed menstruation, and in these cases, also, it would probably be beneficial to deplete.

Where the *Blood* and *Bloodvessels* are conjointly diseased, as in *hemorrhage*, it is frequently required. If, in hemorrhage, the pulse is full and strong, and there is fever; or if the patient is predisposed to plethora, venesection may be more or less freely practised. A large orifice should be made, so as to make a sudden impression, which will frequently check the hemorrhage. Where the hemorrhage is of a passive character, bleed

ing is inadmissible. A few years ago, I was called in consultation to the case of a middle-aged lady, who had been bleeding freely for several hours from the nose, and over which all the remedies used appeared to have no control. She was also suffering with severe headache, and her pulse was moderately full and strong. With the assent of the physician attending her, I opened a vein in the arm, and bled her freely. A moment after we had examined her pulse, and found it still in good condition, she fainted, and it was a long time before she rallied; but the headache had disappeared, and there was no return of the *Epistaxis*.

In *Hæmoptysis*, the causes are so numerous and various, that no definite treatment can be recommended as applicable to all cases. When proceeding from pulmonary inflammations, from congestion or apoplexy of the lungs, from organic disease of the heart, from aneurism, from the suppression of habitual discharges (as the menses, &c.), from a morbid state of the blood, either in quality or quantity, from pregnancy, and occasionally from phthisis, bleeding is indicated, and may be repeated until the hemorrhage is checked, and the morbid excitement alleviated. When the pulse is full and strong, the system plethoric, and any of the above mentioned causes, except phthisis, producing it, we may use considerable latitude in resorting to the remedy; but if we have cause to suspect the existence of tubercles in the lungs, or a predisposition to them, we should be more guarded in our practice; and, if deemed necessary, use it moderately. If inflammatory irritation of the lungs should continue after venesection, or the subsidence of the hemorrhage, cups or leeches should be applied to the thorax. By lessening the quantity of blood by venesection, we relieve the bloodvessels of over-distension, moderate the force of the circulation, and modify the quality of the blood, by the reduction of its red corpuscles, rendering it less irritating or exciting.

In *Hæmatemesis*, arising from gastritis, or vascular irritation, where the pulse is active and strong, venesection may be required, but is seldom called for. If practised, the pulse should be the guide to the quantity taken. Where there is too much

debility to admit of venesection, and inflammation or irritation are present, leeching the epigastrium may be substituted for general bleeding.

In *Melæna*, or intestinal hemorrhage, it is seldom necessary, but where this occurs in a plethoric habit of body, and an excited and strong pulse, it may be useful, either local or general. So in *Hemorrhoids*, accompanied by the same condition of the system as in melæna, it may also be resorted to. The local bleeding should be by leeches to the anus.

In *Hæmaturia*, where produced by local irritation, and not by remote causes, cups or leeches may be applied to the hypogastrium, loins, or perineum; or if not thus relieved, the lancet may be used.

In *Uterine Hemorrhage* of an active form, and especially if the system is plethoric, and the pulse full and strong, blood should be taken from the arm; and if symptoms of uterine congestion continue, local bleeding from surrounding parts may be necessary. But in the great majority of cases of uterine hemorrhage, the causes, and condition of the system, even in active hemorrhage, do not demand it; and in passive hemorrhage it should never be used.

I have thus given a brief view of the diseases of the organs of the circulation, and their contained fluid, in which bleeding is recommended by medical writers—though in my own practice I have judged it necessary in but a small minority of diseases of this character that have fallen to my care. There are but few diseases of this system in which depletion is not recommended, and from the function performed by it, and the immediate effect produced upon it, by the abstraction of blood, we might suppose the result would be prompt and decided upon them. Such is often, but not always the case; and if too freely or injudiciously resorted to, will frequently superinduce other diseases of more formidable characters than the one to be overcome. Such, for instance, is the case with phthisis, or anæmia. In constitutions predisposed to the former, the disease, which was latent, may be rendered active by the debility and impoverished state of the blood, produced by improper depletion; or the latter, by the impoverished condition of the blood, alone.

ARTICLE XVIII.

DEATH FROM TUBAL PREGNANCY.

By A. FISHER, M.D., Chicago, Ill.

Read to the Chicago Medical Society, March 23d, 1866

May 31st, 1860.—I was called to visit Mrs. B., aged 31, sanguine nervous temperament; has given birth to four children; has not menstruated for three months, consequently supposed to be between two and three months advanced in pregnancy. She complained of neuralgic pains in the back, which subsided in a few days under ordinary treatment.

June 7th, one week after, between 12 and 1 o'clock P.M., I was called in haste to see her again. She grew worse so fast, after they sent for me, that Dr. GROESBECK was called in to see her before I arrived, which was about 1 P.M., when I obtained the following history of the attack:—She was quite well the day previous, and on that day, until about 11 o'clock, when she was taken with severe pain in the bowels, with a desire to go to stool. Soon after, while in the water closet on the vessel, the pain increased and she was quite faint, so that she had to call for assistance to get in bed. Dr. G. said, when he first arrived, about half-an-hour previously, that she was very faint and much prostrated. He had given morphine and stimulants, and had applied cataplasms over the stomach and bowels. At that time, her pulse was 130, very weak and feeble; countenance pale and exsanguineous; extremities cool, and wet with perspiration; having a great and almost uncontrollable desire to get up and evacuate the bladder, which we dare not permit for fear of fatal syncope. The abdomen being somewhat distended, with no tympanitis, and the desire to urinate so great, that we introduced the catheter, to make it certain that the restlessness was not in a measure caused by distention of the bladder; but not a spoonful of urine was obtained. Tinc. opium, carbonate of ammonia, tinc. cantharides, brandy, &c., were freely administered, with very little effect. About 4 o'clock

P.M., Professor BYFORD saw her in consultation. He advised the continuation of stimulants, cataplasms, &c., as the only possible hope, but did not pretend to diagnose the case. All we could say, was that the symptoms were such as usually occur in internal hemorrhage, or rupture of some internal organ. She continued to sink, having the same desire to evacuate the bowels and bladder, with occasional cramps of the extremities, until about 7 o'clock P.M., when death ended her sufferings.

Post mortem examination was made the next day, by Professor BYFORD and myself. On laying open the abdomen, we found, in the peritoneal cavity, between four and five quarts of blood, which was about half coagulated. After removing it and sponging out the cavity, we found the left fallopian tube much enlarged and ruptured, containing a male fœtus, about one and a-half inches in length. The only artery ruptured was not larger than an ordinary-sized knitting-needle. The uterus was slightly enlarged, but was not lined with the membrana decidua, as it sometimes is in tubal pregnancies. Every other organ in the abdominal cavity appeared perfectly normal.

This case I ought to have reported at the time of its occurrence, and intended to do so, but neglected it from time to time until it was almost forgotten. A few days since, I heard of a similar case, which reminded me of it, and I determined to report it at once.

I believe it is the duty of physicians, in such cases, or any case, of sudden death, where the cause is not perfectly evident, to propose and insist upon a *post mortem* examination, and report the case, for numerous reasons:—First, to exonerate the physician and attendants from all blame. Secondly, to quiet the minds of all with regard to the cause of death, showing by an examination, in many cases, that no remedies, however judiciously prescribed, could have saved the patient. Finally, by recording the symptoms and treatment of the case, and the appearances after death, we have additional facts to assist us in diagnosing similar cases.

Professor HODGE says, in his *System of Obstetrics*, that there seems to be limit to the development of the Fallopian tube, so

that rupture usually occurs in tubal pregnancies before the fifth month, and that the patient generally perishes from hemorrhage or inflammation. He further says, that M. HECKER has shown that the fatality in tubal pregnancies is about 63 to 1, or about 98½ per cent, while in primitive abdominal pregnancies, the fatality is 56 to 76, or nearly 42½ per cent.

Undoubtedly many women perish from hemorrhage or inflammation, occasioned by extra uterine pregnancies, without any suspicion of the cause, and if *post mortem* examinations were made, in every case, it would unquestionably reveal the fact that a much greater number of deaths occur from that cause than are shown by statistics, consequently it is impo,sible to ascertain the percentage of deaths from extra uterine pregnancy.

Selections.

LECTURES ON THE RECENT ADVANCES OF OUR KNOWLEDGE IN THE DIAGNOSIS AND TREATMENT OF FUNCTIONAL NERVOUS AFFECTIONS.

By C. E. BROWN-SEQUARD, M.D., F.R.S., &c.

GENERAL REMARKS ON THE CAUSES, DIAGNOSIS, AND TREATMENT OF FUNCTIONAL NERVOUS AFFECTIONS.

GENTLEMEN:—The principal objects of these lectures are to point out the practical value of the great advances recently made in our knowledge of the normal and morbid states of the vital properties and functions of the various parts of the nervous system, and to show what progress we owe to experiments on animals, and to clinical researches on the therapeutic effects of many remedies, old and new. Before entering, however, into the study of our knowledge of the diagnosis and treatment of each type of the functional nervous affections, I propose to examine, in this lecture, some of the general principles of symptomatology, of diagnosis, and of treatment, in almost all the varieties of these affections.

One of the most important of the recent advances in physiology and pathology consists in the demonstration that the nerv-

ous conductors of the various kinds of sensitive impressions and of the reflex phenomena, and also for the transmission of nervous force to muscles, bloodvessels, etc., are absolutely distinct one from the others as regards their functions. Leaving aside the nerve-fibres of the brain, some of which have functions altogether different from those of other parts of the nervous system, I have ascertained that, besides the four distinct kinds of nerve-fibres of the higher senses, there are at least eleven distinct kinds of nerve-fibres in the spinal cord and in the cranial and other nerves. The following table shows what are the distinct functions of these eleven kinds of nerve-fibres.* They are—

1st. Conductors of impressions of touch.
2d. " " tickling.
3d. " " pain.
4th. " " temperature.
5th. " " contraction (muscular sense).
6th. Incito-motor conductors.
7th. Incito-nutritive and secretory conductors.
8th. Voluntary motor conductors.
9th. Involuntary motor conductors.
10th. Vaso-motor conductors.
11th. Nutritive and secretory conductors.

I hardly need to say that the number of distinct nerve-fibres is probably much greater than is shown by this table; but the demonstration of the distinction of other kinds of nerve-fibres (such as those serving to sensations of hunger, thirst, pressure, or to voluptuous sensations, etc.), is not yet sufficient.

Almost all the symptoms of functional (and I might say, also, of organic) nervous affections take place through one or other of three modes of alteration of the properties and functions of the fifteen kinds of conductors above named. Those three modes consist in: 1st, a diminution or loss of power; 2d, an

* I have shown that the nerve-fibres serving to sensations of touch, of tickling, of pain, and of temperature, are not only completely distinct one from the others, but that, after having entered the spinal cord as parts of the posterior roots of the spinal nerves, and after a complete decussation between the fibres of the two sides of the body in that nervous centre, they form in it distinct groups or columns of conductors; so that an alteration, limited to a small part of the spinal cord, may strike either the column for touch, or that for tickling, or one of the other two kinds of conductors of sensitive impressions. I have shown, also, that the conductors for the muscular sense differ from the conductors just spoken of in this respect, that they do not decussate in the spinal cord, but that they form also a distinct column in each lateral half of that organ. (See Journal de la Physiologie de l'Homme, etc., No. 24, vol. vi., pp. 610-19 and 645.)

increase of power; 3rd, a morbid state producing a great variety of phenomena. In the nine kinds of conductors serving for the transmission of sensitive impressions the first of these three modes of alteration constitutes *anæsthesia*, the second *hyperæsthesia*, and the third is the cause of *morbid sensations* (including the so-called *referred sensations*).

I will not enter into details here about the kinds of nerve-fibres which I call incito-motor, incito-nutritive or secretory, or about those which I simply name nutritive or secretory; but as it would be impossible to understand the future lectures of this course without some knowledge of the properties and functions of these nerves, I will give, as briefly as possible, a few notions concerning their physiological and pathological history.

1st. *Incito-motor nerves.*—These are the well-known excito-motor nerves of Marshall Hall. A great many facts prove that they are absolutely distinct from the sensitive nerves. All the reflex movements of the muscles of organic or animal life (including the excretory ducts of glands, the bloodvessels, etc.) originate through an irritation transmitted by these incito-motor nerves.

2dly. *Nutritive and secretory nerves, and incito-nutritive and secretory nerves.*—That more appropriate names should be given to these nerves, I will not deny; but so long as their real mode of action remains somewhat doubtful, I think it is better to call them by names which only imply what we positively know of them—*i. e.*, that they are agents of modification of secretion and nutrition. The *secretory and nutritive nerves* are in many respects the antagonists of the *vaso-motor nerves*. While these last nerves, when put in action, produce a contraction of bloodvessels and all the phenomena which I have shown to ensue from that contraction (such as a diminution in the quantity of blood, a diminution of sensibility and other vital properties and of secretions),* the nutritive and secretory nerves, on the contrary, when put in action, occasion a dilatation of bloodvessels and all the phenomena that ensue from it, as shown first by experiments of Czermak and of Cl. Bernard. I proposed long ago (in my lectures at the College of Surgeons in 1858)† an explanation of the action of these nerves, which becomes more and more probable with the frequent discovery of new facts concerning these nerves. The explanation is, that the secretory and nutritive nerve-fibres act upon the tissues so as to in-

† See my Course of Lectures above quoted, p. 149.

* See Course of Lectures on the Physiology and Pathology of the Central Nervous System, 1860, p. 142.

crease their chemical interchanges with the blood, and that, in consequence of this increase of chemical interchange, blood is more attracted to the part, and, as an effect of this greater afflux of blood, there is a dilatation of bloodvessels. In many of the future lectures I will mention phenomena due to this dilatation of bloodvessels from an irritation of this peculiar kind of nerves. I will only add now to what I have already said on this subject, that it is chiefly by a reflex action that these nerves produce their peculiar effects. The redness, the congestion of parts attacked with neuralgia or of neighboring parts, the secretion of tears when the eye is irritated or the skin of the face pinched, the secretion of mucous from the nose, or from laryngeal, tracheal or bronchial mucous membranes, or the diarrhœa produced by cold, and an immense number of facts in which there is a congestion or a secretion as a result of an irritation of cutaneous or other nerve fibres, are all effects of the peculiar influence exerted by secretory and nutritive nerve-fibres on glands and other tissues.

These nutritive and secretory nerve-fibres are, as I will try to prove in future lectures, the agents of production of inflammation, suppuration, and ulceration, by a reflex action. They are the channels of production of meningitis, of encephalitis or myelitis, when those inflammations are due to cold, to a burn, or to a visceral affection. They also have a great share in the production of many functional nervous affections, and particularly tetanus. Besides, through the agency of these nerves, much may be done for the treatment of nervous affections, as I will show hereafter.

The incito-secretory and nutritive nerve fibres are the incident or centripetal nerve fibres which, by a reflex influence, act upon the centrifugal secretory and nutritive nerve-fibres. Their distinct existence is not fully demonstrated, but many facts render it extremely probable.

The causes of functional nervous affections can be divided into several groups. 1st. An irritation by worms, by teething or decayed teeth, by cold, by a burn, a wound, an inflammation, a neuralgia, etc., of centripetal nerve-fibres (the incito-motor, the incito-nutritive, and some others). 2d. An alteration in the quantity or the quality of blood. 3d. Both the two preceding kinds of causes coëxisting together, as in cases of typhus fever, of variola, of diphtheria, of uræmia from disease of the kidneys, etc.

I will not now insist on the mode of action of these causes, as that will be better done in treating of each nervous affection

separately; but there are a few general remarks which will be in their proper place in this introductory lecture. There are two general rules which particularly deserve attention:—

1st. *The same peripheric cause of irritation acting on the same centripetal nerve may produce the greatest variety of effects, including every functional nervous affection or disorder.* This is well illustrated by the effects on the eye of a neuralgia of the infraor supra-orbitalis nerves. There are cases showing: 1st, spasm of the sphincter of the pupil; 2d, mydriasis; 3d, spasm of the orbicularis palpebræ; 4th, paralysis of the orbicularis; 5th, paralysis or spasm of one or several of the muscles of the ocular globe; 6th, photophobia; 7th, amblyopia or amaurosis; 8th, congestion or inflammation of the conjunctiva or of other parts of the eye: 9th, diminution or increase of the secretions of the lachrymal and other glands; 10th, a cataract; 11th, a glaucoma.

Other instances, though less striking, might be adduced. I will only mention what we know as regards the effects of cold air on persons coming out of a theatre. One may be attacked with a sore throat, a second with opthalmia, a third with enteritis, a fourth with a nephritis, and many others with any other visceral inflammation; while one may be attacked with a facial paralysis, and others with almost every other partial paralysis, or with chorea, with contracture, with meningitis, or an inflammation of some part of the nervous centres. It is true that here it is not the same part of the skin which is acted upon by the sudden lowering of the temperature; in most of such cases, however, it is the front part of the chest and the neck that are subjected to the influence of the cold air.

It is probable that the great variety of phenomena following an irritation of centripetal nerve-fibres depends on differences of excitability of some parts of the nervous centres in different individuals. I have examined carefully, on a large number of men, the effects of tickling the sole of the foot, and found that these phenomena differed considerably on different individuals. In one, laughter predominated; in another, involuntary screaming, or shedding of tears, or jerks either in the irritated limb or in both lower limbs, or a general trembling, or a spasm of the diaphragm, or an almost tetanic rigidity of the irritated limb. I need not add that in some individuals there was hardly any effect produced when, being prepared for the irritation, they fought against its influence—a fact which, with many others, shows that by an effort of the will we sometimes can, at least in a certain measure, prevent the production of reflex phenomena.

I will not say more at present on this subject, leaving for other lectures the demonstration that it is through a real reflex action (*i.e.*, through a mechanism similar to that of reflex movements) that the morbid effects of an irritation of centripetal nerve-fibres take place.*

2d. *The degree of excitability of the different parts of the nervous system may increase or decrease considerably in the same person under the influence of various causes.* This proposition is of so great an importance in the diagnosis and treatment of nervous affections, that it is only by the light it throws on many otherwise obscure cases that we are enabled to recognise their nature, and to apply the proper treatment. Many parts of the nervous system that are completely, or almost completely, inexcitable in a healthy condition, become excitable, and sometimes in a wonderful degree, under the influence of several morbid causes. Amongst these parts, I will point out the grey matter of the spinal cord, and the nerves of the tendons, aponeuroses, dura mater, periosteum, bowels, bladder, kidneys, and some other viscera. Many causes very different one from the other, may increase the excitability of the various parts of the nervous system. I will mention here only the principal of these causes: 1st. I have found that muscles, nerves, and the spinal cord, become more excitable when laid bare, and particularly when the air in contact with them is richer in oxygen than the ordinary atmospheric air.† 2d. A congestion or an inflammation will increase the excitability of nervous tissues everywhere, but nowhere so markedly as in the grey matter and some parts of the white columns of the spinal cord, which in consequence of that increase, will become able to produce referred sensations of pain, of cold or heat, of tickling, etc., and phenomena due to an irritation of motor, vaso-motor, and nutritive nerves. 3d. An afflux of blood, such as occurs merely by gravitation, or after a section or a paralysis of the sympathetic nerve, or a lesion of the spinal cord, the medulla oblongata, or the base of the brain, will also increase the excitability of peripheric nerves in the parts where this affiux takes place. 4th. Certain remedies or poisons (strychnine particularly) will increase the reflex excitability of the spinal cord to a wonderful degree; while others, such as atropine, chloroform. etc., will diminish it consider-

* In one of the ensuing lectures I will explain why I do not admit the views so ably propounded by Prof. Lister and Dr. Handfield Jones on the so-called "inhibitory" nerves.

† See Proceedings of the Royal Society, vol. viii. 1857, p. 598; and Journal de la Physiol. de l'Homme, &c., vol. i. 1858, p. 617.

ably. 5th. Certain diseases, such as tetanus and hydrophobia, will increase extremely the reflex excitability of some parts of the cerebro-spinal axis. 6th. A great loss of blood, anæmia, chlorosis, will also increace the reflex excitability of the nervous centres.

The increase of reflex excitability in cases of extreme debility, as in old age, or after a loss of blood, or other causes of insufficient nutrition, would be very difficult to understand if we did not know that the reflex excitability of the spinal cord can be increased under the influence of certain substances (strychnine principally) when no blood at all remains in the bloodvessels of that nervous centre, as proved beyond the possibility of doubt by Messrs. Martin-Magron and Buisson. The excitability of sensitive nerves may also be increased when the quantity of blood is much diminished, as we often observe in fingers that have been exposed to cold air or cold water. It seems, from a review of all the facts I know bearing on this point, that certain substances contained in blood, altered in quantity or quality, will act on the excitability of nerve-fibres in the nervous centres, or in the nervous trunks and branches, so as either to increase it, as is done by strychnine (on the grey matter,) and oxygen (everywhere), or to decrease it, as is done by carbonic acid, atropine, chloroform, etc.

To conclude what I wish now to say on the excitability of the nerves, I will only mention—1st, that I have ascertained that the excitability of the same nerve varies in different parts of its length, and to such a degree that in some parts the excitability seems nil or is very slight, while in other parts it is considerable; 2d, that I have shown by positive experiments that the excitability of muscles, of nerves, and of the spinal cord, may be very much increased, while the *force* developed by the action of those parts is very small. For instance, atrophied muscles, unable to contract with half the force shown by healthy muscles, will, however, contract under the influence of an excitation that will produce no effect on healthy muscles.

I will say only a few more words on the causes of functional nervous affections. The important discussions between Virchow, Spiess, and others, on the share of the nervous system in the causation of the various morbid alterations of tissues and organs, have been very useful in bringing forward many interesting facts; but the exclusiveness of the two opposite schools, at the head of which are the eminent men I have just named, has thrown a great deal of obscurity on questions which, considered with less partiality, might have been solved easily. It

is certainly true, as maintained by Virchow,* that nutrition and secretion, normal and abnormal, can be carried on without the intervention of the nervous system; but this does not at all prove that the nervous system cannot interfere, for good or for evil, in the nutrition and secretion in the various tissues and organs. For instance, there is no doubt whatever that an inflammation, followed or not by suppuration and ulceration, can take place without any intervention of the nervous system: but, as will be proved in one of the ensuing lectures, there is no doubt also that inflammations not only can be, but very frequently are, produced by a nervous agency. Indeed, facts are extremely numerous that establish clearly—1st, that normal nutrition and secretion do not depend essentially on any interference by the nervous system, and that all morbid changes in these fundamental organic functions can take place without any nervous influence; 2d, that the nervous system may, and almost constantly does, influence nutrition and secretion, and that it frequently produces, or helps to produce, a great variety of alterations of these two fundamental functions.

Not only can an excitation of the same nerve produce effects in the different parts of the nervous centres, in one or other of the viscera, or in distant nerves, or muscles, or bones, etc., but it can also produce, in the same part of the nervous centres, in the same viscus, in the same muscle, etc., different kinds of alteration. Why is there such a variety of alterations produced in one and the same part by an excitation which varies only in intensity? To answer this question I must go beyond the limits of the subject-matter of this course of lectures, and cast a glance on the mode of production of morbid affections of the various tissues and organs. Physiology, morbid anatomy, and clinical observation clearly point out that all nervous affections (organic and functional), as well as affections of any other part of the body, owe their production to three different causes.

1st. A special inherent tendency (inherited or not) of the elementary parts of the tissues to become altered in one or in another way.

2d. The production, or introduction in the blood, of those materials that are necessary for the formation of morbid growths, or able, like poisons, to cause alterations of nutrition or secretion.

3d. An influence of an excitation from outside, acting with or without the intervention of the nervous system, or a purely

* See Dr. Chance's excellent translation of Virchow's "Cellular Pathology," Lect. XIV. London, 1860.

nervous influence starting from a peripheric or a central part of the nervous system.

If we keep in mind the truth that these three causes may exist together and in various degrees, we can easily understand how the same excitation of the same nerve may produce in the same distant part different kinds of alteration of nutrition. It is so that an irritation from a wounded nerve will produce either tetanus, or cholera, or catalepsy, or epilepsy, or delirium, etc., and by a reflex action on a peripheric part, muscular wasting or trembling, a contracture, a neuralgia, etc.

I now pass the diagnosis of functional nervous affections, on which subject I will only point out in parallel columns the principal distinctive features of these affections compared with organic nervous diseases.

Characters of functional nervous affections.	*Characters of organic nervous diseases.*
1st. The principal causes are: an alteration of the blood, and an irritation of a part of an incident or centripetal nerve, by a neuralgia, by worms, by teething or decayed teeth, by a wound. a burn, &c.	1st. One of the principal causes is a special tendency (inherited or not) to inflammation, to alterations of the bloodvessels, or to the formation of morbid growths.
2d. Great variability in the intensity of the symptoms, and regular or irregular recurrence of attacks, with intervals of almost perfect health between these attacks.	2d. Persistence of the principal symptoms, with slow variations in their intensity.
3d. A sudden or rapid cure or improvement is not rare.	3d. A sudden or almost sudden cure is impossible, and a rapid improvement is exceedingly rare.
4th. Certain symptoms—such as a sensation of pricking, of formication, of burning heat, of icy cold, and other symptoms of irritation of conductors of sensitive impressions, and also alterations of nutrition and secretion of the skin and of mucous mem-	4th. Most of the symptoms due to the irritation of conductors of sensitive impressions and of nutritive and secretory conductors, are extremely frequent in inflammation and even congestion of the nervous centres or their meninges, and they are not

branes and glands (bladder, kidneys, etc.) are extremely rare, except in a few of these affections (neuralgia, affections due to alterations of the blood, etc.).

5th. The temperature of affected parts generally low.

6th. The sphincters of the bladder and rectum usually normal.

7th. An aura, felt or unfelt, very frequently exists in some forms or periods of epilepsy, of hysteria, of catalepsy, of hydrophobia, etc.

8th. To remove the cause is an essential part of the treatment.

rare in many other organic nervous diseases.

5th. The temperature of affected parts generally high.

6th. The sphincters of the bladder and rectum often attacked with spasm or paralysis.

7th. An aura, felt or unfelt, exists only when the organic disease has caused a functional nervous affection.

8th. To remove the cause is often impossible, and, when possible, of less importance than the direct treatment of the structural alterations.

Other means of diagnosis between organic and functional nervous affections have been found within the last few years. As I shall have to speak of them at some length when I treat particularly of certain functional disorders, I will merely say here that the most interesting amongst them are—1st. The effects of pressure on nerves, as employed by Dr. A. C. Pinel, Dr. Aug. Waller, and Messrs. Bastien and Vulpian. 2d. The effects of tickling, and the degree and extent of reflex movements. 3d. The influence of galvanic applications. 4th. The effects of strychnine as a test for congestion in the spinal cord and its meninges. 5th. The existence of anæsthesia limited to a small spot. 6th. The alteration in the speed of transmission of sensitive impressions. 7th. The existence of an unfelt aura.

Treatmemt of functional nervous affections.—Great advances in the treatment of neuroses have been made within the last ten or fifteen years, particularly as regards a more rational or better appropriated employment of remedies and other modes of treatment than by the discovery of new remedies. I may say that I will speak of the rejection of certain modes of treatment, or of their limitation to fewer cases, as a real advance in therapeutics. I will divide this subject into eleven parts, as follows:—

I. Means of suppressing the causes, or of diminishing their intensity.

II. Means of diminishing the reflex excitability of the nervous centres.

III. Moral treatment.

IV. Special modes of treatment in periodical affections.

V. Treatment through irritations of the sensitive and other incident nerves.

VI. Physical and mechanical means of treatment.

VII. Complex modes of treatment, combining the two processes of irritation of incident nerves, and a modification of the blood.

VIII. Change of the composition of the blood, and elimination of morbid and other poisons.

IX. Special use of anæsthetics.

X. Treatment by remedies acting directly on the nervous system, or on the unstriped muscular fibres.

XI. Treatment by tonics and other remedies.

I. *Means of suppressing the causes, or of diminishing their intensity.*—When functional nervous affections are due to an evident irritation of a branch, or of the terminal ramifications of a nerve of a limb, or a superficial nerve of the abdomen or chest, several means of treatment may be successfully employed to check or to cut off the irritation. I will say a few words on the most important of these means.

1st. *Local applications of narcotics.*—In cases of epilepsy, of tetanus, of hysteria, and most other functional affections of the nervous system, a wound of the skin or of a branch of a nerve may be the cause of the nervous disorder. Narcotics, and particularly soluble salts of morphia and atropia, employed together, should be applied on the wound itself, in doses varied according to the absence or abundance of suppuration. An important rule of this mode of treatment, about which I will say much more in the lecture on tetanus, is that the application of narcotics must be frequently renewed, particularly if there is an abundant discharge of pus. If the cause of a functional nervous affection is a division of a large branch or of the trunk of a nerve, an injection of a solution of morphia and atropia should be made at some distance from the wound in the subcutaneous cellular tissue, round the central part of the divided nerve (half a grain of a salt of morphia with one-fiftieth of a grain of a salt of atropia).

2d. *Local application of ice.*—I have long ago pointed out the usefulness of this application on a wound producing a func-

tional nervous affection. I will only say here, that when such a means is employed, particularly in a case of tetanus, there should be no interruption in the presence of ice on the wound during the whole of the time that the nervous affection lasts. Billroth has recorded two cases in which tetanus due to a wound has appeared, notwithstanding the application of ice on the wound. It is probable that in these cases there had been some interruption in the application of ice.

3d. *Application of the actual cautery.*—This means, which may be useful when it is necessary to alter the nature of the secretions in a wound, or to destroy parts of tissues containing a venom, has not generally so much value as the preceding and the following modes of treatment.

4th. *Various applications on the trunk of nerves at some distance from a wound.*—It may be useful to lay bare the nerve that gives filaments to the wounded part, and to apply sulphuric ether or narcotic alkaloids or ice upon it. In cases in which there is reason to expect that the original wound will soon heal, this mode of treatment might prove useful.

5th. *Section of a nerve.*—The number of cases of epilepsy, of tetanus, and of other nervous complaints, due to a wound, a burn, etc., in which this mode of treatment has proved quite successful, is now so large that there is no doubt as regards its immense value. It is most important to know that the operation must be performed early, and that its chances of success decrease rapidly with the prolongation of the nervous affection produced by a wound, a burn, or some other peripheric cause of irritation. It is necessary not only to divide the nerve completely, but to take away a small part of its peripheric end, which is to be examined carefully with the microscope to ascertain whether it is altered or not. If it is found inflamed, or otherwise altered, the operation must be repeated (if possible, of course) on the same nerve, much nearer the spine or the cranium. The examination of a small part of the nerve extirpated in this second operation will prove important for the prognosis of the case. It can hardly be an objection against the division of a nerve in affections like epilepsy, tetanus, hydrophobia, etc., that a paralysis is the necessary result of the operation. No sane man can hesitate between these two things—an almost certain death, or the persistence of a most horrible affection which may produce imbecility; and a paralysis of motion and sensation in a part of a limb, or even in a whole limb. And the hesitation, if any could exist, would certainly give way to the knowledge that the ends of a divided nerve, even when a small

part has been excised, will often unite soon, or at least within a year, and the paralysis be cured more or less completely. The rapidity of union of the ends of a divided nerve may be so great that in a few weeks, and even sooner, there may be a partial return of function, as shown by cases reported by Mr. J. Paget, by Mr. Syme, and by Prof. Laugier. As regards the completeness of the return of the vital properties in a divided nerve, I have seen that it may be as perfect as possible, particularly in the case of a nobleman on whom Sir William Fergusson had divided the infra-orbitalis for a neuralgia.

6th. *Operations on the genital organs.*—An able surgeon has lately treated leveral kinds of functional nervous affections by the extirpation of the clitoris. That this operation may sometimes be useful, there is no doubt at all. But I cannot look upon this mode of treatment as one that should be employed in other cases than those in which a distinct aura starts from the clitoris, or in those cases in which that organ is morbidly sensitive and much hypertrophied. There are cases of nervous complaints, due to masturbation, in which the clitoris has been extirpated without any durable benefit as regards the nervous affection, or even as regards the masturbation. In women, as well as in men, the only decisive means against masturbation is the production of a small ulcer (by caustics or the red iron) on parts of the genital organs that are unavoidably touched or moved in the act of self-abuse, so that every attempt to accomplish the act, either with or without the help of the hand, is so painful that the patient must give it up. As regards the removal of the testicles, it seems to me a barbarous operation if performed only because there is an excessive tendency to sexual intercourse. I will say more on this point when I treat of epilepsy.

7th. *Trephining of the cranium.*—As a mode of treatment against epilepsy, this operation has been much more frequently performed than is generally known. It has also been performed, and successfully, in a case of tetanus, which I will mention in another lecture. It would be out of place here to discuss the question of the usefulness of that dangerous operation as a means of treatment of epilepsy. I will merely say that it is only in cases of an irritation of the dura mater, by a broken piece of bone, by diseased bone, or any other evident organic cause, that trephining can rationally be performed; and that even in such cases a cure might be obtained (and has really been sometimes obtained) by the use of counter-irritants on the diseased spot. In another lecture I will give the details of a

most interesting case published by Mr. Henry Lee (in Dr. Beale's *Archives of Medicine*, 1860, p. 80), in which trephining of cranium cured an ulcerous affection of the skin of the arm, and spasmodic movements in the same limb.

8th. *Ligature of the carotid artery.*—This most irrational mode of treatment is, or, I hope, will be, completely abandoned. It has been employed in epilepsy, and in mania, with the view that those affections depend on a congestion of the brain, and that a ligature round the carotid artery would diminish that congestion. I will show in the lectures on Epilepsy that the good effects of this operation in the cases of Preston and his imitators have been obtained chiefly through some injury to the cervical sympathetic nerve.

9th. *Other operations for the removal of causes of functional nervous affections.*—I will only point out the importance of the removal of a decayed tooth, of a tumor, of a carious or necrosed bone in those cases in which there is a probability that these sources of irritation are the principal causes of a nervous complaint. Of other operations, such as tracheotomy and the cauterization of the urethra, I will only say a few words. It is now perfectly established that the theory of epilepsy given by Marshall Hall was wrong; and that if tracheotomy may be useful in some cases of epileptic coma, of spasm of the glottis, in tetanus, in hydrophobia, or in whooping-cough, etc., this operation is then of service against an effect, and not against a cause, of the existing nervous affection. As regards the cauterization of the urethra, according to Lallemand's plan, in cases of nervous complaints due to seminal losses, I must say that I have been consulted by a great many patients who had been vainly submitted to that operation; while I have often observed a considerable amelioration, and sometimes a cure, by a medicinal and hygienic treatment, consisting in the use of atropine, the ergot of rye, large doses of the bromide of potassium, and tonics—such as quinine, iron, manganese, silver, with cold, shower, and sitz baths, gymnastic exercise, and the most nourishing alimentation.

10th. *Treatment against alterations of the blood, and visceral diseases.*—I only wish to point out under this head that every organ or part of an organ, in so far as it has nerves, and also if it has any marked influence on the composition of the blood, can be the cause of a functional nervous affection. Therefore any alteration of any organ must be fought against in any such nervous affections, particularly when no other cause of it can b found but that alteration. As regards the morbid states of the

blood, there is no general rule of treatment that can be given. Anæmia, chlorosis, rheumatism, gout, and syphillis are to be treated in the same way when they are the causes of a nervous complaint as when they have produced no such effect.

II. *Means of diminishing the reflex excitability of the nervous centres.*—An increase of the reflex excitability of some part of the nervous centres, is one of the most important elements of many neuroses, and particularly epilepsy, hysteria, tetenus, hydrophobia, delirium tremens, chorea, paralysis agitans, and some forms of reflex insanity. To diminish that increase of reflex excitability is an essential part of the treatment in those affections. The following remedial agents are to be employed against this morbid excitability:—1st. Codeine, morphine, atropine, valerian aconite, the chloride of barium, and the bromide of potassium, are undoubtedly the most reliable remedies against an increased reflex excitability. According to the kind of nervous affection, and also to the seat of the increase of that vital property, we are to select one or several of these remedies. Atropine, valerian, and the bromide of potassium, are the most valuable in epilepsy; the chloride of barium is of real value against tetanus and paralysis agitans, but of no use in the common forms of epilepsy; codeine, morphine, and valerian are useful against hysteria, etc. None of these remedies, however, equals chloroform, but unfortunately its influence is merely transitory. Counter-irritants and the warm bath have also a great power against the increased reflex excitability, as I will show in another part of this lecture. 2d. As a morbidly increased excitability is very often due to anæmia, or to an impoverished nutrition, all the hygienic and medical means (good food, exercise, and tonics) that can improve nutrition, should be ordered in such cases against that morbid state. 3d. It is of the utmost importance to improve the sleep, which is generally so bad in patients attacked with a morbid increase of the reflex excitability. For this purpose an invaluable remedy has recently been discovered: it is the bromide of potassium. Excepting when pain is one of the causes preventing sleep (in which case opium, aconite, and belladonna should be employed together), I have found that this remedy has a most wonderful power to produce a quiet and refreshing sleep, without any drawback that I am aware of. I usually give to adults a dose of thirty grains of that salt a-quarter of an hour before the last meal, and a second dose of from thirty to fifty grains at bedtime. In cases in which, without any nervous complaint, there is sleeplessness owing to some cause of cerebral excitement, as

well as in all neuroses, excepting hydrophobia, tetanus, very severe cases of delirium tremens, and some forms of insanity, sleep is almost always induced by that remedy. In some cases I have found it necessary to increase the dose of the bromide, and to give also one grain or one grain and a-half of codeine an hour before bedtime. In those affections in which the bromide of potassium is not powerful enough as a sleep-inducing agent, a warm bath of four, five, or six hours' duration is often successful.

III. *Moral treatment.*—As I shall have to dwell at length on this subject when I treat of hysteria, I will only say a few words here on two general principles, which, notwithstanding their importance, are very much neglected. The first of these principles, so well established by the researches of Dr. Cerise, is that a *serious aim* is of the greatest value, and for many persons quite essential, to prevent or to check nervous disturbances. The applications of this principle are, of course, very difficult, and often impossible, in certain neuroses; but in those cases in which any kind of serious work, not too fatiguing or exciting, is liked by the patient, he should be induced to do it. In cases of hypochondria, of hysteria, of chorea, and even of epilepsy, a great benefit can be derived from a serious employment of the mental and physical activity of the sufferer. How often have I not seen young epileptics kept in idleness (alas! by medical advice), and, having gained more or less of the vices it leads to, improve rapidly from having their minds occupied at regular hours, in the same way as healthy people of their age. The second principle of which I will speak now is, that we must, in the interest of our nervous patients, much more than in our own, give the confidence and hope in the treatment we recommend. In hysterical and all nervous complaints allied with it, and also in hypochondria, and in several other neuroses, a great hope of cure will do much to work out the cure. No doubt you will say, How to give hope? I answer that the best means for that purpose is to have hope ourselves, and to express our hope with the accent of conviction. And as you would ask, How can we command hope in ourselves? I answer that the very knowledge of the truth of the principle I am now speaking of is enough to render one hopeful. I need not repeat that I am now speaking only of those neuroses in which the power of the mind upon the body is immense, and so much so that in some forms of these neuroses a sudden or almost sudden cure is not very rare.

IV. *Special modes of treatment in periodical nervous affections.*

—It is not my intention to speak now of the well known useful influence of sulphate of quinine against perfectly periodical attaeks of neuralgia, of epilepsy, etc.; I only wish to speak of a method of perturbation of the nervous system whieh I have employed with great advantage in some of those cases of local convulsions, of attacks of epilepsy, of hysteria, etc., which either recur nearly at fixed periods, or are preceded by a warning that gives time to make use of the means I will now mention. In a case of spasm of some muscles of the jaw and face, preceded by a sensation of pricking in the cheek, and occurring several times a-day, in a boy seven years old, I found that violent exercise on a swing always prevented the fit when the patient had time to run to the swing before the muscular contraction had begun. By that means, which never failed, the boy was many hundred times saved from his attaek before being completely cured of it, whieh occurred on the coming out of a molar tooth, which, however, had not given the least pain. The beneficial influence of this mode of perturbation of the nervous system I have observed since in a number of cases of hysteria and epilepsy. A great many other means of changing the state of the nervous system have been employed with some benefit by other physieians or by myself. Among these means I will merely mention here the following:—A ligature round one or several limbs (even when there is no evident aura) tied strongly and suddenly; a pretty sharp pinching of the skin; a rather large dose of an emetic taken with a great quantity of water; a cold shower-bath on the back; the application of an interrupted and powerful electro-magnetic current; a dose of twelve, fifteen, or eighteen grains of sulphate of quinine about an hour before the expected attack; an enema of a drastic medicine; the inhalation of chloroform, etc. I will give more details on these important perturbing means, in the lectures on hysteria, neuralgia, and epilepsy.

ON THE INFLUENCE OF THE INGESTION OF COFFEE ON THE UREA AND CHLORIDES IN THE URINE.

By CHARLES E. SQUAREY, M.R.C.S., Resident Medical Officer to the London Fever Hospital.

(COMMUNICATED BY DR. GARROD.)

Observations were made on three cases whilst Mr. Squarey was residing at University College Hospital as physician's

assistant. The coffee was taken three times daily, at first in quarter ounce doses, and gradually increased till in the third case from four to six ounces were taken each day. The temperature in two of the cases was taken night and morning, and was never found to be above or below the limits of health. The urine was collected every morning at eight A.M., and examined the same day for urea and chlorides. Both analyses were made by Liebig's volumetric method.

UREA.

In the first case, the observations were carried on for six weeks. The patient's health was good the whole time, and he never complained of any uneasy sensation after taking the coffee. It was taken three times daily in quarter-ounce doses every alternate week. On comparing corresponding weeks of coffee and non-coffee taking, no appreciable difference is to be found. The greatest is in the first and second weeks. The daily average in the second week, when quarter-ounce doses of coffee were taken three times each day, was 2·198 grammes more than in the first week when no coffee was taken; in the third and fourth weeks the daily average was less by ·424 of a gramme in the fourth week when coffee was taken; in the fifth and sixth weeks the daily average was less by .515 of a gramme in the sixth week when no coffee was taken.

In the second case, the observations, owing to an attack of tonsillitis supervening, and the patient leaving the hospital immediately on recovery, were only continued for one week, so that the influence of the coffee can only be judged of by comparing the amount of urea passed per kilogramme of body weight with the normal amount in health. The patient's age was 17 years; his weight was 115 lbs., or 52 kilogrammes; and he passed on the average ·428 of a gramme of urea per kilogramme of body weight. He was taking half-ounce doses of coffee three times daily.

In the third case, the observations were carried on for ten weeks. On comparing the first and second weeks, it is found that the daily average was greater in the second, when three cups of a strong infusion of coffee were taken three times each day, by ·381 of a gramme. On comparing the third and fourth weeks, a great diminution is found in the daily average of the latter, when quarter-ounce doses of coffee were taken three times daily; it was less by 5·099 grammes. Yet in the fifth week, when the same amount of coffee was taken, and in the seventh week, when half an ounce was taken twice a day, and in the

eighth week, when half an ounce was taken three times a day, the daily average was greater than in the sixth, when no coffee was taken; so that, although the daily average was lessened one week when quarter-ounce doses of coffee were taken, yet it did not rise when the coffee was left off, or become again diminished when the same and even larger doses were taken. The daily average in the ninth week, when from one and a-half to six ounces of coffee were taken each day, was less by 4·795 grammes than in the tenth week, when no coffee was taken; but in the tenth week, the patient not feeling well, the diet, which up to this time had been very strict, was varied, his health and appetite improved, and with it there was naturally a daily increase in the excretion of urea.

From these results, Mr. Squarey argues that coffee in the above doses certainly does not increase the excretion of urea, or diminish it to any appreciable extent; for he says that the slight difference that occurred in the daily average of the six consecutive weeks in the first case was by no means beyond the limits of health. That in the second case the amount of urea excreted per kilogramme of body weight was quite normal. That although in the third case there was the large diminution of five grammes in the daily average of the fourth week, when coffee was taken, yet this diminution did not recur when the same and even larger doses were taken; nor did the daily average rise when the coffee was left off, which it should have done had the decrease been entirely due to the influence of the coffee. That, according to Dr. Parkes, the decrease of five grammes in the daily average is not beyond the limits of health; for Dr. Parkes, in his book on the Urine, page 8, says that "the maximum and minimum amounts of urea passed on any one day by an individual are usually about one fifth above and below his mean amount;" so that in the third case, the patient passing on the average between thirty and thirty-five grammes, an increase or diminution of six grammes would be within the normal limits.

CHLORIDES.

In the first case, the daily average of the two weeks when coffee was taken in quarter-ounce doses was as nearly as possible the same as in the two corresponding weeks when no coffee was taken; the amount excreted per kilogramme of body weight being quite normal.

In the second case, half-ounce doses of coffee being taken three times daily, the amount of chlorides excreted per kilo-

gramme of body weight was ·162 of a gramme—a rather large, but certainly not abnormal proportion for a boy aged seventeen, and weighing 52 kilogrammes.

In the third case, the rate of excretion of the chlorides was high throughout the whole course of the observations, both during the coffee taking and the non-coffee taking weeks. The amount excreted per kilogramme of body weight was highest in the seventh week, 272 of a gramme, when half-ounce doses of coffee were taken twice daily; and lowest in the eighth week, ·168 of a gramme, when half-ounce doses were taken three times each day.

In conclusion, Mr. Squarey states that neither of the patients suffered in any way from ill effects from taking the coffee. There was never any giddiness, delirium, or unsteadiness of the hands. The patients invariably slept well.

The pulse, noted several times, was generally found to be increased for half an hour or so after taking the coffee.

The President spoke in terms of commendation of the large and patient observations in the author's paper. There were, however, several points in it on which further information was required. In the first place, it was necessary to know more exactly what kind of coffee was used—whether it was Plantation or Mocha, and whether, if it had been bought ground, it had not been adulterated. Again, the amount of exercise taken during the experiments would affect their results considerably. The effect of muscular activity in increasing the amount of urea was shown by its increase in chorea. Coffee would sometimes constipate, and at other would act as an aperient.

Dr. Webster said that what was often sold as coffee might scarcely be coffee, but chickory. His object, however, in rising, was to remark, with great submission, that he could scarcely understand the paper. This was not due to any fault in the Secretary's reading, but to using of French names for weights which required calculation. He had, he remarked, protested before against this, and still thought that English words ought to be used before an English society. He thought also the subject should be studied on a more extensive scale, and suggested to the author to inquire more widely into the effects of coffee-drinking. To do this, he had only to go across the Channel to France, and then to Spain, where no coffee was drunk, but only chocolate.—*London Lancet.*

LECTURES ON CHOLERA.

By Prof. ALONZO CLARK, M.D.

Being a full synopsis of Lectures on Cholera, recently delivered at the College of Physicia s and Surgeons, New York, and specially reported for the Philadelphia Medical and Surgical Reporter.

III.

CAUSES AND NATURE OF CHOLERA.

The next point in the consideratian of this disease is its cause, and the mode in which that cause acts upon the system, so as to produce the various phenomena which have already been noticed.

The literature of the subject abounds with a variety of theories of the manner in which the cause of cholera acts. One theory is, that the disease is zymotic in a certain degree, in other words, that after the introduction of the poison into the system, by a process of fermentation of some sort, a poison is produced like that which was at first introduced, if not in the body of the patient himself, yet in the excretions.

Another very prevalent theory is that there exists, during a cholera epidemic, and as its cause, a peculiar condition, the so-called *epidemic constitution* of the atmosphere, which is widely diffused, and acting as the general cause, brings on an outbreak of the disease whenever it meets certain local circumstances and causes the so-called *localizing conditions.*

Dr. Snow has another theory, according to which the disease is a communicable one, in a particular way: he claims that in the alimentary canal of the cholera-patient a poison is produced, which consists of something capable of being absorbed by, or floating in, water; that the water of wells and cisterns, during an epidemic, becomes impregnated by this poison and causes the spread of the disease; that a reason why the disease is so much more frequently communicated to nurses and attendants around the patient than to physicians, is because the former are less cleanly, and hence more frequently subject to introduction of this peculiar poison into the system.

In regard to this theory, certain things must be taken in consideration. Dr. Snow claims that the poison is generated in the alimentary canal, and carried by the evacuations and discharges from the stomach and bowels. Now, it is testified to by Schmidt, of Munich, that a man, in a state of intoxication,

drank a large beer-glassful of the vomit of a cholera-patient, without being followed by the first symptom of cholera, and physicians of Munich are said to have freely tasted and even swallowed the choleraic transudations without ill effects.

Again, a noticeable fact in the geographical course of cholera, is that it almost uniformly ascends rivers and streams; thus it ascended the Volga, Thames, Hudson, and the Mississippi. If the disease was propagated by the water contaminated by cholera dejections and evacuations, it is plain that it should descend in its course. In regard to some rivers, it may be objected that they are not resorted to for drinking and domestic purposes. But in others which are thus freely used, as for instance the Mississippi, the disease has always travelled up stream, not down.

Another theory, which, indeed, may be looked upon as but a modification of the former, is that adopted by several German physicians, which also considers a peculiar poison to result from the discharges of the patients, but not immediately. The cholera discharges, according to Thiersch, are not poisonous at first, but become so, after the lapse of some time, by decomposition and fermentation under an elevation of temperature of at least 50° Fahrenheit. According to facts brought forward in support of this theory, this fermentation which developes the poison in the discharges ceases in about eight days, and then they become inert.

The chief evidence upon which Thiersch bases his opinion, is that he fed a number of mice on fresh cholera discharges, and a number on cholera material which had undergone fermentation. The animals fed on the first remained perfectly well, while those that had been living on the fermented discharges were killed by it, under symptoms resembling cholera, diarrhœa taking place before death, and *post mortem* appearances being analagous to those in man. Animals which were fed on old cholera evacuations, after fermentation had ceased, suffered as little as the first.

The logical conclusion, if this theory be true, is that means of disinfecting the evacuations of cholera-patients by means of chloride of lime, sulphuric acid, etc., constitute a chief and important element of prophylaxis. In support of this, it is stated that there are two prisons in the neighborhood of Munich; in one, very strict and energetic measures were adopted, during the prevalence of the disease, to disinfect the discharges of all the prisoners and inmates, and the result was that only *one* case occurred among five hundred inmates; in the other insti-

tution, in which no means whatever were adopted of disinfecting the discharges, 15 per cent of the inmates were attacked.

The evidence in regard to this theory is not yet conclusive; still it deserves attention, and should remain open for further investigation.

Another theory which has been advanced, is that the influence of *ozone*, negative or positive, in the atmosphere, is connected with the causation of the disease. There are many quite opposite opinions regarding this theory, and the influence of the presence or absence of ozone in abnormal quantity. Dr. Peters, of Lexington, Ky., during the prevalence of a cholera epidemic, instituted investigations as to this point, and, according to his statements, not much change in the ozonic condition of the air could be observed; if there was any change, it was unimportant. The most recent observations, probably, on this subject, are those of Dr. W. B. Richardson, of England. Some of his conclusions as to the facts at present known respecting ozone are stated as follows:—It is always present in the air, naturally in the proportion of about 1 part in 10,000; it is rapidly destroyed in large towns, crowded, close, and filthy localities; ozone gives to oxygen its life-supporting properties; its effects are destroyed by great heat; diffused minutely through the air, it produces on inhalation distinct symptoms of acute catarrh. When animals are subjected for a long period to ozone in small proportions, the agent acts differently in different animals; carnivora die, after some hours, from disorganization of the blood, while herbivora will live for weeks and suffer from no acute disease. Science has not yet actually *demonstrated* that the presence of ozone in the air can produce actual disease, though the facts approach to demonstration that catarrh is thus produced. During periods of intense heat of weather, the ozone loses its active power. Ozone acts rapidly upon putrefactive organic matter, breaking up the ammoniacal products of decomposition, and hastening organic destruction. In a negative condition of air, *i. e.*, the absence of ozone, the purification of the organic matter is greatly modified, and the offensive products are increased; wounds become unhealthy and heal slowly in such negative air, and though there is no demonstrative evidence that any diseases are actually caused by this negative condition, the inference is fair that diseases which show a putrefactive tendency are influenced injuriously by a negative condition of the oxygen of the air. It is also probable that, during this state, decomposing organic poisonous matters become more injurious. And, finally, as ozone is used up in crowded locali-

tics, and as it is essential that ozone should be constantly supplied, in order to sustain the removal of decomposing substances and their products, no mere attention to ventilation and other measures can be fully effective, unless the air introduced be made active by ozone. Fever hospitals and other large buildings in towns should be artificially fed with ozonized air.

All, however, that is positively known regarding ozone, in the present state of science, is a bare probability that if it exists in certain quantities, it may purify the air. As to its causal connection with cholera, nothing is positively known.

Electricity, too, has been charged with being the cause of cholera; at least, it has been claimed that its presence or absence has something to do with its production. A French observer has made a statement that he observed, during the prevalence of cholera, that he could not obtain sparks as usual from an electrical apparatus, and in England, it is said to have been noticed that, during a cholera epidemic, a large horseshoe magnet attracted and held suspended much larger quantities of iron than ordinarily, and that, as cholera abated and ceased, its attractive power diminished also.

These and similar observations, however, do not bear sufficient weight to justify any decided conclusions.

Leaving the question as to the influence of ozone, still another theory has been proposed by Dr. Mitchell, who finds the cause of cholera to be a *fungus* or fungoid spores, developed in the earth or in the atmosphere, and introduced into the system by the respiration. In another branch of this theory, the origin and growth of the fungus is placed into the body itself. This theory received a special importance when Drs. Brittain and Swain announced that they had found in the drinking water of London the *cholera fungi*, which were minutely described. At Edinburgh, however, these fungi could not be detected with the microscope, neither in the drinking water nor in the dejections of the patients. Dr. Parker, the microscopical anatomist of the London Hospital states that fungi of various sorts are not unfrequently found in the intestinal canal of animals and man, but that they are perfectly inert. The strongest reason, however, for discrediting this statement is in the result of the investigations of a committee appointed by the College of Physicians of England, who examined into the matter. They reported that the *rings*, which were described as forming part of the cholera fungi by Swain, were found to be remnants of onions, turnips, and other vegetables; the *oval cells*, also claimed as part of the cholera fungi, were ordinary spores

of the rust of wheat or corn, such as are frequently found in bread; and the *disk*, also part of the supposed cholera fungus, had a similar origin. So, on the whole, this idea comes to nought, as well as Dr. Snow's theory, unless further and stronger evidence is produced.

Another view is, that it is produced in a manner similar to yellow fever. This theory claims that there are certain wide-spread conditions, atmospheric or terrestrial, which produce a certain predisposition; and that added to these a special miasm is produced, external to ourselves; a certain poison is liberated in the air, unknown in its nature, intangible, known only by its effects, which will reproduce itself, and so render a whole town infected. This we know of yellow fever, which is not an indigenous disease, but can be kept off by rigid quarantine and strict sanitary rule. In just this way it seems cholera is produced—by a special poison, a malaria, the production of certain general wide-spread conditions and local influences, but not reproduced in the system.

All these various theories agree in one point, namely, that *there is a poison* which gives rise to the disease, and this is a fact which cannot be disbelieved.

How this poison is introduced into the body cannot be confidently answered. We might assume that it is absorbed through the surface of the skin, the lungs, or the alimentary canal, etc. But, in one way or another, it is introduced, enters the blood, and circulates through the system.

Introduced into the system, the poison of cholera soon begins to act upon *the ganglionic nervous system.* It is true, the examinations made after death, of the centres and nerves of the ganglionic system have not led to constant appearances; and, indeed, they are not found to have undergone marked changes, except occasional softening and enlargement. But still this is the best hypothesis which we can present, as to the manner in which the poison of cholera acts upon the system, and that we can find no decided anatomical lesions, is no real excuse for not accepting it. A thousand changes are produced and observed in the inervation of the organs and tissues of the body, characterized by the most marked phenomena, without our being able to discover any physical appearances in the nerve structure, which would account for them. Certain medicinal substances appear to have specific affinities in their action, to different parts of the nervous system; strychnia, for instance, upon the spinal system, opium upon the brain. Now in a case of strychnia-poisoning you observe the most fearful commotion

of all the muscles controlled by the spinal axis, resulting in death. Still, if you search after death for any marked anatomical lesions in the spinal cord or nerves, none will be found. Thus, again, in a person dead from an overdose of opium, though congestion may be found in the vessels and meninges of the brain, the most careful examination will not discover any microscopical changes in the brain-cells or the minute structure of the organ. Thus certain agents, indisputably, exert a powerful action upon various parts of the nervous system, with no accompanying special lesion that can be observed; we might run through the whole of the medicinal articles acting upon the nerves to illustrate this point.

While, then, the absences of pathological evidences after death forms no objection to this hypothesis, there are certain analogies which speak strongly in its favor. The branches or filaments of the sympathetic nerve, which go to the eye, govern and regulate the circulation of that organ; if they are divided or disordered, you observe hyperæmia, ecchymosis, and a series of changes, which finally lead to ulceration and destruction of the organ. So the ganglionic system everywhere, but more particularly in the alimentary canal, governs and regulates capillary circulation. The poison of cholera begins to act upon the ganglionic system, partially paralyzing it, and gradually increasing in its effects during the period of diarrhœa. The blood flows into these vessels in unusual tides, giving rise to hyperæmia more or less intense, and from which the copious discharges are derived; this goes on until the blood, by the constant drain of its fluid constituents becomes markedly and seriously changed; then follows the disturbance in the spinal system, the cramps and convulsions, which, it is probable, are entirely reflex. The hyperæmia at first does not manifest a tendency which it afterwards shows; but, as it continues, much as in the eye after division of the branches of the sympathetic nerve, assumes an inflammatory character, for we cannot, on looking at the *post mortem* appearances, avoid the conclusion that there is inflammatory-hyperæmia, or even a certain degree of inflammation. There is, however, no organizable, plastic deposit. The material thrown out, as described in a former lecture, is something like the exudation of diphtheria; and, it may be added here, that this infiltration of granular matter into the intestinal mucous membrane and glands, seems to be almost characteristic of the disease.

Dr. Horner, as early as 1832, noticed and described the detachment and denution of epithelium, and sloughing of portions

of the mucous membrane; and he believed the disease to be inflammatory. Pirogoff, too, says that the cholera appearances have great analogy to inflammation.

In summing up the evidence regarding the cause and nature of cholera, it may be stated, then, that there is a poison, the exact nature of which is not yet perfectly understood; that this poison, introduced into the system, causes disturbances of innervation, or a sort of paralysis of the ganglionic nervous system; that this leads to extensive hyperæmia of the alimentary canal, resulting in the symptoms described, and to the reflex phenomena alluded to, and as the disease progresses, obtaining more or less an inflammatory character.—*Phil. Med. & Surg. Reporter.*

MEDICINAL USES OF PTELEA TRIFOLIATA.

By O. F. POTTER, M.D., St. Louis, Mo.

I wish to call the attention of physicians to a plant, the medical virtues of which I have been familiar with for some years, and from personal experience would recommend it to the favorable notice of the profession.

The plant is known as the ptelea trifoliata, or, commonly, as the wafer-ash or wingseed, a species of so-called swamp dogwood, and is of the natural order Xanthoxylacæ.

It is a shrub of from six to eight feet in height. The leaves are trifoliate and marked with pellucid dots. The leaflets are sessile, ovate, short, accuminate, downy beneath, lateral ones inequilateral, terminal ones cunate at base, from three to four inches long by one to one and three-fourths inches wide. The flowers are polygamous, nearly one-half inch in diameter, of a greenish-white color, and of a disagreeable odor. Stamens mostly four with style short; fruit, a two-celled samara, nearly an inch in diameter, winged all round, nearly orbicular. It flowers in June. It is common to this country, growing more abundantly west of the Alleghanies, in shady, moist, and rocky places generally at the edge of woods. The bark of the root possesses its peculiar medicinal properties, which it yields to boiling water, but alcohol is its best solvent. The bark, when dried, is of a light brownish-yellow color, comes in cylindrical rolls of quills a line or two in thickness, and from one to several inches in length; is irregularly wrinkled externally, and is covered with a thin epidermis; internally it is of a yellowish-

white, but becomes darker on exposure. It has a peculiar, rather aromatic smell, and a bitter, pungent, and rather aerid taste, yet nothing disagreeable; the pungency is persistent, which is owing to the oil which it contains.

I have been using it as a tonic to follow the use of quinine in all grades of fevers, also in cases of general debility connected with gastro-enteric irritation. It is mild, unirritating, having a soothing influence on the stomach, promoting digestion. It promotes the appetite, enabling the stomach to endure suitable nourishment, and favors the early re-establishment of the digestive functions, and will be tolerated by the stomach when almost all other tonic or stimulant remedies are rejected. I have found it especially useful in cases of debility following a low grade of fever, also with females after confinement, or where the menstrual functions are deranged, frequently by sustaining the digestive and secretive functions, regulating the menstrual flow; also, as a sustaining and strengthening stimulant in debility connected with or following wasting ulcers or scrofulous sores.

I have been in the habit of using it in the form of a tincture, made by putting six ounces of the bark and one-half ounce of ginger to two quarts of whisky; the dose from one to two tablespoonsful three times a day for an adult.

I feel assured, from over ten years' experience in using it, that it will be found a most valuable and reliable remedy. It has been used occasionally by the so-called eclectic physicians, and also by the negroes of the South, who call it the scrofula root, from its usefulness in sustaining the system when debilitated by that so common disease amongst them. The old French inhabitants near St. Louis also used it many years ago as a cure for the intermittent fevers of the country, long before quinine was known. When used for a great length of time, or in very large doses, it occasionally, in some persons, occasions an erysipelatous inflammation in the surface, which, however, only lasts for a short time if its use is persevered in, and no ill effects follow it.—*N. Y. Med. Jour., Dec., 1865.—St. Louis Medical Reporter.*

Asiatic Cholera in Virginia.—It is a noteworthy and astonishing fact that, during the forty years in which this scourge has afflicted the earth, no case of Asiatic cholera has ever occurred in the basin of country embracing the mineral springs of Virginia.—*London Lancet.*

Proceedings of Societies.

CHICAGO ACADEMY OF SCIENCES.—TRICHINÆ.

The following report, presented to a recent meeting of the Academy of Sciences, will be read with interest and profit. The character of the Committee is a full guarantee of the reliability of the facts presented in the Report. Let all who continue to eat pork be certain that it has been thoroughly cooked. —[Ed.]

Your Committee appointed at the last regular meeting to examine into the facts concerning the supposed existence of trichinæ in pork raised in this country, and the liability to disease which it may occasion, have the honor to make the following report:—

In preface it is proper to state that no reliable observations have ever yet been made in this country, with the view of deciding the question of the occurrence of trichinæ in our pork. Their existence here has been repeatedly denied, but the denial has never been based upon sufficient research. Your Committee became aware at the outset that the task imposed upon them was one far too arduous for their unassisted labors. The importance of the subject and the magnitude of the interests involved, indicated the necessity of an investigation of the most thorough character, and the propriety of accumulating the results of a large number of observations in order that the conclusions should be based upon data of such extent and variety that all causes of error might be eliminated.

To this end we have availed ourselves of the permission granted us at the time of the appointment of the Committee, and have added to the original number our colleague, Dr. Hosmer A. Johnson. We have also been fortunate in securing the aid of a number of professional gentlemen residing in our city, who have relieved us of much of the labor connected with the very extensive series of microscopic examinations of pork, necessary to the attainment of reliable and definite results. To

these gentlemen, Drs. HOLLISTER, JEWELL, SHERMAN, NICKERSON, HAY, LYMAN, and NASON, we beg leave here to offer our acknowledgments for the assistance rendered.

Its Character and History.—Before presenting the results of our observations it may not be out of place to give a brief sketch of the character and history of the little helminth which is justly causing so much excitement among consumers of pork, a kind of animal food which is probably more extensively employed and more generally useful, not to say indispensable, than any other. Our own studies upon the structure and migrations of this helminth have indeed developed nothing new; but they have been sufficient to satisfy us of the accuracy of the most recent observations of the German naturalists, LEUCKART, and VIRCHOW in particular, who have devoted their attention to the subject. Trichina spiralis has been known for 30 years as an endo-parasite in the muscles of man, which could be bred in the muscles of some other mammals by feeding them with it. More recently it has been discovered to occur naturally in the muscles of swine. It is a minute, slender, and nearly transparent nematoid worm, scarcely 1-20th of an inch in length, even in its adult state, with a bluntly rounded posterior end, and an attenuated anterior extremity, at the tip of which the mouth is situated. Its internal structure, even when fully developed, is very simple. There is a straight alimentary canal, the æsophagial portion of which is enveloped in a glandular sheath; a yellowish globular organ at the middle, and a generative sac, nearly filling the posterior half of the body. In the encysted state in which the worm is most commonly observed, the latter organs are not fully developed.

History of the Trichina.—The life history of the trichina has been ascertained to be as follows:—

It is introduced in its encysted state into the stomach of man, or some other mammal, which may be susceptible to its ravages, and which may feed upon flesh infested with it. Very shortly the worms are freed from their capsules by the action of the digestive fluid and range freely in the stomach and intestines of the custodian. Their development proceeds rapidly and pro-

creation takes place within four or five days after their ingestion. The males bear to the females the proportion of one-tenth only. The females are ovo-vivaparous, each giving birth to from 60 to 100 young and dying shortly thereafter. The young are extremely minute and thread-like, and remain for a short time lurking in the mucus of the lining membrane of the alimentary canal, where they cause great intestinal irritation, diarrhœa, and even death, if present in sufficient numbers. During the purging, many of the young trichinæ are swept from the intestinal canal with the fecal matters, in which they probably remain for some time alive, and it is supposed that swine sometimes derive their parasites from this source. After reaching a proper degree of size and strength, the young trichinæ begin to penetrate the walls of the intestines, and make their way toward their proper home, the voluntary muscles. They are now found in the glands of the mesentery and in the serous cavities. When numerous they cause great disorders in their passage and the animal infested, which has survived the previous intestinal irritation and its consequences, may now succumb from peritonæal inflammation.

The Migratory State.—In the course of their migration the trichinæ gradually assume the cork-screw form. They first reach the muscles immediately surrounding or traversing the cavity of the body, such as the diaphragm, lumbar, pharyngeal, intercostal, and abnormal muscles. Many doubtless take up therein their permanent abode, but it has been observed that they have a tendency, especially when very numerous, to push toward the extremities, or to pass between the ribs into the spinal muscles. This tendency to wide distribution is also shown in the fact that they are found more abundantly in the distal extremity of each muscle,—that farthest from the intestinal tract, in which situation their migration appears to have been stopped by the impervious tendon. In traversing the muscles, as far as has been observed, they do not penetrate the fibres, but wind their way between them. During this operation they cause in the affected man or animal great muscular pains and soreness, cramps, and even tetanic symptoms.

The migration of the young trichinæ occupies about four weeks. We have now traced them up to the point at which they become encysted. Of the causes which guide them in each individual case in the selection of their hibernaculum,—why some should encyst themselves close to the intestinal canal, while others proceed even to the extremities of the body, we know but little. It is probable, however, that this depends upon their supply of food and degree of development, and, that, after a proper condition is reached, a slight obstacle may arrest their course and cause them to encyst. Thus we have found them in every instance most abundant, not in the centre of masses of pure fibre, but in the immediate vicinity of some such obstacle as tendon, adipose tissue, or even the investing membrane (connecting tissue) of the fasciculi. It is the muscular fibre only that they affect, none having ever been found encysted in fat or the other tissues.

The Encysted State.—Having arrived at the terminus of its migration, the worm perforates the wall of the fibre selected, passes into it and flattens or tightens its coil in order to accommodate itself to the circumscribed space. Even then, however, the coil is so much larger than the diameter of the fibre as to dilate it at the point to two or three times its natural width. Immediately around its coil the trichina secrets a delicate membranous sac, and the enlarged cavity of the fibre becomes filled with a granular detritus, which is itself shortly enclosed by the action of the vital forces of the muscle, in a second envelope, the whole forming the fusiform cyst. This cyst gradually becomes calcareous by secretions from the surrounding parts and in time may become sufficiently cretified to be apparent from its whiteness to the naked eye. But it is only in man that these *calcareous* cysts have been observed,—hogs being generally killed long before time is afforded for the accumulation of sufficient lime. When the trychinæ have all become encysted, the acute pains usually cease in the subject. The amount of inconvenience afterwards experienced depends entirely upon the number of the fibres rendered inert by the presence of the parasites. This number is often sufficiently great to produce par-

tial paralysis. Cases have occurred for instance, in which the use of the fingers has been entirely lost while other members retained their power. The parasites have a tendency to crowd into certain parts and leave others unaffected.

The Torpid State.—The trichina has now reached its quiescent or torpid state, in which it must remain during the life of its custodian, unless dislodged by accident. It feeds no longer, yet its development goes slowly on, until it has reached the condition of puberty. From this time it must remain unaltered, awaiting the chances of its freedom, dependant upon the ingestion of the flesh containing it by some animal carnavorously inclined. Then the cycle goes on as already detailed. These helminths can breed but once in the body of one and the same animal.

Origin of the Trichina.—With regard to the origin of the trichina little or nothing is known. It has been thus far found to occur naturally only in man, the hog, and the cat. All statements of its natural occurrence in other mammals seem to have been founded on error, although some of them may be easily infested by special feeding. Above all, reports of its occurrence in earth-worms and other cold-blooded animals are to be entirely discredited. These latter are indeed infested with tilariæ, and other nematoid worms, somewhat resembling trichinæ; but the practised zoologist easily distinguishes between them. The occurrence of trichinæ in man and in the cat is easily accounted for,—both have probably eaten of infested pork. But how shall we account for the existence of the worm in the hog? We can scarcely account for all cases of trichiasis in these animals upon the supposition that they have eaten of the flesh of man, cats, or of other hogs, although the small proportion of hogs infested might lend some color of probability to this supposition. The question remains for further investigation.

Period of Existence.—As before mentioned, trichinæ have been known for 30 years to exist in the muscles of man. But it is only within a very few years that their deadly character, when introduced into the system in considerable numbers, has been fully understood, and has attracted the attention of the

medical profession. The terrible catastrophies of Hedersleben and Hettstadt, at the former of which 100 and at the latter 83 persons were the victims of a meal of trichinous pork, with many minor disasters, have not failed to excite in Europe the deepest interest and the most careful study of the ravages of the flesh worm. To such an extent, in fact, have these disasters alarmed the people that in many parts of Europe no pork is allowed to be sold without having previously undergone microscopic examination.

Tenacity of Life.—The deadly character of the trichinæ depends upon their great tenacity of life. Total decomposition of the muscle containing them will not effect their vitality, and, in cooking, their destruction can only be accomplished by the application of a heat above 150 degrees Fahrenheit.

Analysis.—Your Committee have conceived that the object for which they were appointed is twofold:—first, to ascertain whether trichinæ actually exists in the hogs of this country and in those of the northwest in particular; and, secondly, should they exist, to determine the extent of the danger thereby incurred, and to ascertain the best means of averting it. For the attainment of the first-mentioned object they have, with the assistance of the gentlemen named at the head of this report, procured and examined portions of muscle taken from 1,394 hogs in the different packing houses and butcher stalls of our city. The results of these examinations have been engrossed in the tables herewith presented. The first of these shows the number of specimens, and in most cases the names of the muscles examined by each observer, with the number of trichinous specimens found by each. The second gives various data concerning the 28 trichinous specimens found, which are numbered in the order of their discovery, and are preserved in the cabinet of the academy:—

Observer.	Pharyngeals.	Diaphragm.	Abdominals.	Intercostals.	Lumbars.	Spinals.	Various.	Total.	Trichinous specimens.
Dr. Johnson	1	7	----	----	15	224	74	321	13
Dr. Sherman	17	9	30	37	----	35	2	130	2
Dr. Nickerson	----	----	10	9	----	107	124	250	3
Dr. Jewell	----	----	----	----	----	----	212	212	3
Dr. Hollister	----	----	----	----	----	----	70	70	2
Dr. Nelson	----	----	----	----	----	----	50	50	1
Drs. Blaney & Hay	4	9	8	----	----	10	3	34	----
Dr. Nason	----	----	9	7	----	31	----	47	----
Dr. Andrews	----	----	----	----	----	----	96	96	1
Dr. Lyman	----	----	----	----	----	----	90	90	1
Dr. Stimpson	6	8	----	----	16	61	3	94	2
Total	----	----	----	----	----	----	----	1394	28

No.	Observer.	Muscle.	No. to a cubic in.
1.	Dr. Johnson	Spinal	350
2.	Dr. Johnson	Spinal	300
3.	Dr. Johnson	Spinal	200
4.	Dr. Johnson	Intercostal	100
5.	Dr. Johnson	Intercostal	500
6.	Dr. Johnson	Spinal	600
7.	Dr. Johnson	Abdominal	3,000
8.	Dr. Johnson	Spinal	500
9.	Dr. Johnson	Spinal	1,000
10.	Dr. Stimpson	Spinal	18,000
11.	Dr. Johnson	Spinal	15,000
12.	Dr. Johnson	Spinal	300
13.	Dr. Johnson	Spinal	300
14.	Dr. Johnson	Spinal	300
15.	Dr. Stimpson	Spinal	400
16.	Dr. Nickerson	Unknown	48
17.	Dr. Nickerson	Unknown	80
18.	Dr. Nickerson	Unknown	192
19.	Dr. Sherman	Unknown	3,000
20.	Dr. Sherman	Pharyngeal	6,000
21.	Dr. Andrews	Abdominal	2,000
22.	Dr. Nelson	Spinal	2,000
23.	Dr. Lyman	Unknown	16,000
24.	Dr. Hollister	Unknown	500
25.	Dr. Hollister	Unknown	500

26.	Dr. Jewell	Unknown	2,000
27.	Dr. Jewell	Unknown	250
28.	Dr. Jewell	Unknown	500

The Proportion of Diseased Hogs.—By these tables it will be perceived that we have found trichinæ in the muscles of 28 hogs out of the 1,394 examined. We may therefore conclude that in the hogs brought to Chicago 1 in 50 is affected with trichiniasis in a greater or less degree. We must confess our surprise at arriving at this result, which indicates with little doubt the startling fact that trichiniasis in pork is even more common in this country than in Germany, where it has caused so much suffering and death. For instance, in the city of Brunswick, where a most careful inspection of 19,747 hogs was made in the years 1864-5, only two were found to contain trichinæ in their muscles, the proportion being 1-10,000 against 1-50, as before stated in our country.

Our Immunity.—The comparative immunity from the disease which our own people have enjoyed, undoubtedly results from the habit of cooking meat before eating it, while in Germany it is eaten raw by the poorer classes on account of the high price of fuel.

Variation in Number.—It will be also observed by consulting the tables that the specimens examined show great variation in the number of worms infesting them. We have given, indeed, only an approximation to the number existing in a cubic inch in each specimen of muscle, but this approximation is sufficiently near the truth for our present purposes. Our method has been to count the trichinæ occurring in several different portions of muscle, each a cubic tenth of an inch in size, and to multiply the average number by 1,000, to find the number to a cubic inch. By this method we find that only three of our specimens (Nos. 10, 11, and 23) contain over 10,000 to the cubic inch and are therefore as densely infested with the worm as the pork which has occasioned the disasters in Germany. The remaining 25 are infested in a comparatively slight degree, viz.:—from 48 to 6,000 to the cubic inch. The specimen most thickly infested contains 18,000 to the cubic inch, and we have calcu-

lated that a person eating an ordinary meal of this pork in a raw state would speedily become a victim to the ravages of not less than 1,000,000 of young trichinæ. In certain cases of death from trichiniasis, the number found in the muscles of man has been 2,000,000.

With regard to the muscles of the hog most liable to be infested, we have to state that our determinations do not accord with those of European observers, inasmuch as more than half of our trichinous specimens have been taken from the spinal muscles. In Europe the microscopic inspectors of pork are directed to examine nine different sets of muscles, viz.:—Those of the diaphragm, tenderloin, shoulder, front and back of neck, intercostals, extensors of fore-arm, flexors of the leg and the muscles of the larynx. In this list the spinal muscles are not even mentioned, although their examination with us has proved the most prolific in results, even after making allowance for the fact that we have searched these muscles more than any others. Our experience has led us to believe that a much smaller number of examinations than are required by the European rules will suffice for the detection of trichinæ in dangerous numbers in pork. The occurrence of a number so small as to escape observation, in a search of two or three of the muscles most liable to be infested, we do not conceive to be dangerous when we consider that the greater proportion of the worms must be killed even by the ordinary method of cooking.

Defence against its Ravages.—Now that the existence of trichinæ in our pork has been established beyond a doubt, it will be proper for us to point out all known means of defence against its ravages.

First, with regard to the rearing of hogs. These animals undoubtedly become infested through the eating of flesh of some kind, since no trichinæ nor germs of trichinæ have ever been found in any vegetable food. A strict attention to the feeding of hogs and their confinement in pens where no animal food is accessible in an infallible preventive against trichiniasis in them. Such management is all the more necessary, since European authorities agree that it is impossible to diagnose the disease in

the animal from external appearances, and no culpability can therefore attach to the farmer for selling hogs which prove to be affected with trichinæ.

In regard to pork, the origin of which is doubtful, the use of the microscope is primarily indicated. With this instrument only can we ascertain with certainty whether the muscles of the hog are free from the parasite. The general use of this instrument is, however, impracticable, unless a system of microscopic inspection be adopted here as in Europe at the great packing establishments. But we have in our power much more simple means of insuring safety in the consumption of pork. It is simply necessary to cook it thoroughly so that every portion of the meat shall have experienced a temperature of at least 160 degrees Farenheit. We cannot insist too strongly on this point. Again by properly salting and smoking the meat for at least ten days, the trichinæ should they exist, will certainly be killed. Simple dessication of the meat, if continued for a period of sufficient length, will also kill them. They will never be found alive in old hams, for instance. On the other hand, mere pickling appears to have very little effect upon these worms.

Existence before Discovery.—Trichinæ have doubtless always existed in the muscles of the hog, although probably not to the same extent as at present, and trichiniasis in man may have existed to a considerable extent in this country before its nature and cause became known. Some of the members of your Committee can recall cases of obscure diseases which have come to their knowledge in past years, which may have been owing to the presence of trichinæ.

Economical Aspects.—Having now fully exposed the exact extent of the danger from trichinous pork, to which our people are liable, and stated the means of avoiding it, we will proceed to close our report with a few remarks upon the economical aspects of the subject. A panic has been produced in the mind of our public by the news which has reached us from Germany concerning the disasters which have occasionally followed the consumption of pork in a raw state. The excitement has, with

little doubt, been fostered by interested persons, for speculative purposes, until people have come to imagine there is a danger in eating pork of any kind,—a danger all the more terrible because hidden, little understood, and undiscoverable by ordinary means. All this excitement has occurred, before a single instance of the occurrence of trichinæ in American hogs has been, as far as we are aware, authentically reported. It has therefore become necessary that the subject should be thoroughly investigated, in order that the people, by familiarity of the danger and confidence in their understanding of its character, may not be the pray of superstitious fears. The panic which now prevails is unfounded in reason, senseless, and greatly injurious. We do not allude to the commercial aspects of the question, a matter of small moment compared with the great importance of pork as the kind of meat diet upon which nine-tenths of our agricultural population, north and south, mainly depend. In our view it would be folly to discard this kind of meat from our list of articles of food, when all possibility of injury attending its use may be avoided by the most simple means. Let the people but understand that only 1 hog in 48 contains trichinæ at all, that only 1 in 300 contains them in sufficient numbers to cause considerable danger, and that even in these cases the worms are rendered innocuous by proper smoking, drying, or cooking,—and we imagine that few sensible persons will refuse pork as food if it suits their convenience to use it.

(Signed) E. Andrews, M.D.,
J. V. Z. Blaney, M.D.,
Hosmer A. Johnson, M.D.,
William Stimpson. M.D.,
Secretary.

PROCEEDINGS OF THE DeWITT COUNTY MEDICAL SOCIETY.

The Society met in Annual Session, in Clinton, at the office of Dr. Shurtleff, on Monday, the 2d day of April, 1866, Dr. Tyler in the Chair.

The minutes of the previous meeting were read and approved.

On motion of Dr. Madden, Dr. Drombolone and Dr. Jno. A. Edmiston were invited to participate in the proceedings of the meeting.

The election of officers being in order, the following gentlemen were elected for the ensuing year:—

President—Dr. John Wright.

Vice-President—Dr. B. K. Shurtleff.

Secretary—Dr. C. Goodbrake.

Censors—Dr. J. H. Tyler, Dr. R. T. Richards, and Dr. T. W. Davis.

Delegates to the Illinois State Medical Society—Dr. R. T. Richards, Dr. B. K. Shurtleff, and Dr. T. W. Davis.

Delegates to the American Medical Association—Dr. B. S. Lewis and Dr. T. K. Edmiston.

Dr. Tyler, the retiring President, then delivered an address on the diseases most prevalent in DeWitt County during the past year, for which he received the thanks of the Society.

Dr. John A. Edmiston, of Clinton, and Dr. Charles W. Drombolone, of Marion, having been proposed for membership, and the Censors having reported favorably, they were unanimously elected members of the Society.

Dr. Z. H. Madden reported a case of intermittent fever, followed by partial paralysis, which called up a discussion, in which most of the members present participated.

The essayists appointed at the last meeting, having failed to fulfil their duty, were continued, and the President appointed Drs. J. A. Edmiston and C. W. Drombolone to read each an essay at the next meeting.

Cholera was chosen as the subject for discussion at the next meeting.

On motion, it was

Resolved, That in view of the probable visitation of cholera, this Society earnestly recommend that the Board of Trustees of the Town of Clinton take the necessary steps to remove all filth and garbage from the public square, streets, and alleys of said town, and that it pass an ordinance compelling the citizens to remove from their premises all offal, manure, and other kinds

of filth; and, so far as possible, to whitewash all unpainted fences and outhouses; also to apply freely of lime to sinks, sewers, and privies; and that the carrying out of the same measures be recommended to the citizens of the several unincorporated towns in the County.

On motion, the Secretary was ordered to furnish copies of these proceedings to the *Chicago Medical Examiner, Clinton Public*, and *Chicago Medical Journal* for publication.

On motion, the Society adjourned, to meet in Quarterly Session at Clinton, on the first Monday of July next, at 10 o'clock A.M., at Dr. Shurtleff's office.

C. GOODBRAKE, *Secretary.*

Editorial.

CONVENTION OF REPRESENTATIVES FROM MEDICAL COLLEGES OF THE WEST.

In response to a call of the Faculty of the Ohio Medical College for a meeting of delegates from the Medical Colleges of the West, for the purpose of agreeing upon a more uniform rate of lecture fees, the several delegates assembled in the faculty-room of the Ohio Medical College, in Cincinnati, at 10 o'clock A.M., of April 24th, 1866.

The meeting was called to order by Prof. M. B. Wright, of Cincinnati, who, after briefly stating the objects for which the meeting had been called, moved that Prof. N. S. Davis, of Chicago, be Chairman of the Convention. The motion was carried unanimously, and Prof. Davis took the Chair.

On motion of Prof. Mendenhall, of Cincinnati, Prof. Gustav C. G. Weber, of Cleveland, was appointed Secretary.

The members present, were as follows:—

M. B. Wright, from the Medical College of Ohio.

Geo. Mendenhall, from the Miami Medical College.

N. S. Davis, from the Chicago Medical College.

Francis Carter, from the Starling Medical College.

Gustav C. G. Weber, from the Charity Hospital Med. Col.

S. H. Douglas, from the Med. Dep't of University of Mich.

T. M. Holloway, from the Medical Department of University of Louisville.

Prof. Wright presented letters from the Deans of the St. Louis Medical College, the Nashville University, and the Medical Department of the Iowa University, expressing a concurrence in the object of the meeting, and an assurance that the schools they represented would sanction such uniform and advanced rate of fees as should be agreed upon by the Convention. The colleges not represented either by delegates or letters were, Rush Medical College, at Chicago; Cleveland Medi- College, at Cleveland; Cincinnati College of Medicine and Surgery, at Cincinnati; Medical Department of Humboldt University, at St. Louis; and the Kentucky School of Medicine, at Louisville.

To elicit the wishes of the Convention, Prof. Wright offered a resolution declaring that the sum of $105 should be adopted as a uniform rate of lecture fees by the Medical Colleges in the West. A very free and pleasant interchange of views followed, in which all the members participated, and during which it was made apparent that the immediate adoption of such a standard was impracticable, mainly on account of the peculiar position of the Medical Department of the University of Michigan.

After a recess for dinner, the Convention re-assembled at 4 o'clock P.M., when Prof. Davis offered the following preamble and resolutions, as a substitute for the resolution offered by Prof. Wright. The latter accepted the proposition, and after another free interchange of views in relation to the whole subject of Medical College organizations, as well as fees, they were unanimously adopted, as follows:—

Whereas, the cause of medical education requires the establishment and maintainance of permanent colleges, with all the necessary means for illustration and practical instruction, as well as competent teachers, thereby involving a large annual expenditure of money, therefore,

1st, *Resolved*, That a reasonable demand for lecture fees is

required by the best interests both of the colleges and those who patronize them.

2d, *Resolved*, That competition among Medical Colleges, to be beneficial to the profession and the cause of medical science, should be based *entirely* on the ability of those engaged as teachers, and the completeness of their curriculum, with the facilities for practical demonstrations accompanying it, and not on *mere pecuniary* differences in the cost of attendance; and, hence, the fees charged in all the Medical Colleges, in a given section of country, should be uniform, or so near uniform that the actual cost of attendance in the different colleges shall be practically equal.

3d, *Resolved*, That inasmuch as only a limited number of students can be properly accommodated or educated in any one college each year, any State which, with enlightened liberality, should so endow the medical department of its State University as to make education therein free, ought to so far regard the interests of the institutions of other States, as to limit the freedom of its instruction to the citizens of its own State.

4th, *Resolved*, That in the opinion of the college faculties here represented, the aggregate annual fees for instruction in each college should be not less than $105 for each student.

5th, *Resolved*, That a committee of three be appointed, to communicate the foregoing views to the faculties of the several medical colleges not here represented, and also to the Regents of the University of Michigan, with a view to the ultimate removal of such obstacles, legal or otherwise, as may be in the way of the voluntary adoption of the sum named in the 4th resolution, or some other sum near it, as a uniform standard of college fees; and to take such measures as they may deem necessary, and report to a future Convention called for that purpose.

6th, *Resolved*, That the colleges here represented would, in the opinion of the delegates present, be willing to lengthen their annual lecture terms to six months, if, by so doing, practical uniformity in the standard of fees could be fully secured.

On motion of Prof. Holloway, the Secretary was authorized to furnish a synopsis of the proceedings of this Convention to

the different medical journals of the country for publication.

On motion of Prof. Carter, Professors M. B. Wright, of Cincinnati, T. M. Holloway, of Louisville, and N. S. Davis, of Chicago, were appointed the committee called for by the 5th resolution.

Prof. Carter also moved, that when this Convention adjourn, it be to such time and place as the committee just named may deem proper; which motion was adopted.

On motion of Prof. Holloway, the Convention then adj'd.

The meeting was certainly a very pleasant one; the discussions throughout were cordial, friendly, and sincere; and we think it constitutes the beginning of a movement which, if followed up in the same spirit, will lead to the speedy adoption of several measures of great importance, both to the Colleges and the profession at large.

[For the information of students interested in knowing the price of lecture tickets during the coming winter, we would state that the contemplated advance can only take place after *all the Western colleges* have agreed to it, and that such an agreement cannot, by any possibility, be arrived at under a year or two. There will, therefore, be no rise in the prices next winter, except, perhaps, in a few schools whose rates are now below the average. E. A.]

Trichina.—The aversion to pork, produced by the agitation of the subject of trichiniasis, has induced the Chicago Academy of Sciences to appoint a committee to investigate the subject, with a view to ascertain the exact state of facts, in order that the public may know whether the trichina exists in this region or not, and if it does, whether the consumers of pork can, in any way, be assured of safety in the use of this important staple. The present state of uncertainty in the public mind is injurious to various interests.

The committee commenced by obtaining specimens of muscle from about 1300 different hogs, from all parts of the West, fed in various ways, and raised in all sorts of circumstances. These specimens were distributed among eight of the best microsco-

pists of this city, for examination. The result showed that trichina, beyond all doubt, exists here, and probably has existed through all time wherever hogs have lived. Among the 1300 animals, 28 were found to contain the parasite, which is rather more than 1 animal in 50, or 2 per cent. Of these, only 3 or 4 contained them in dangerous quantities. The committee reports that the statement that trichinæ can endure a boiling heat without death, is false and absurd. By actual experiment, they are found to be always killed by a temperature of 150° Fah. It is proved, also, that salting and smoking for 10 days is fatal to them. A case of trichiniasis is reported at Detroit, Mich., in the *Medical Review*, in which a woman, lately arrived from Germany, died, having eaten the parasites before her arrival here. Two cases were also reported in the *Buffalo Medical Journal*, two or three years since, but with the exception of these three, the committee cannot learn of any deaths clearly traceable to trichiniasis in this country. In Germany, where so many deaths have occurred, the poor people have a habit of eating a large amount of raw pork, in which state the parasite is taken alive into the stomach of the patient; but in this country, pork is universally well cooked, even by the most indigent. This accounts for the fact, that though trichinæ are doubtless as ancient and universally distributed as the hogs themselves, and Americans have always made pork a very prominent article of diet, yet the disease is almost unknown this side of the water.

The conclusion is, that pork in a raw state, or not thoroughly cooked, is a dangerous food; but, when well cooked to the centre, is as absolutely safe as any other article of diet. It is proper to add, that trichinæ are found in a variety of animals besides swine, and that the same rule, as to thorough cooking, ought to be applied to all, whether fish, flesh, or fowl. Not only is trichina found widely distributed, but also the germ of the tapeworm may be found in a variety of the animals used for food. Beef and mutton are, probably, more free from parasitic dangers than any of the meats in common use.

Cholera. The cholera in New York is said to be still confined to Quarantine. In Halifax, the Health Officer, Dr. Slayter, is reported to have died of cholera, contracted while in attendance on the cholera-patients quarantined from the steamer England. The daily papers have telegrams, stating that the disease is raging at Key West, Florida, and give rumors of deaths from it in Washington and Cincinnati. On the whole, the appearances indicate that the disease is likely to pay another series of visits to all our chief towns. It behooves all, therefore, to be ready, and to instruct the public in all those hygienic measures adapted to limit the ravages of the prospective epidemic.

Illinois State Medical Society.—The next Annual Meeting of this Society will be held in *Decatur*, on the first Tuesday in June next. All local Medical Societies in the State are entitled to one delegate for every *five* resident members; every Medical College to two delegates; and every Public Hospital to one delegate. N. S. DAVIS, *Permanent Sec'y.*

Notice to Subscribers.—During the past few weeks, we have been sending *receipts* to all of our subscribers who have paid up to the end of this year in advance, and *bills*, showing the balance due, on all who have not so paid. We wish to get the books settled, and have every one of our patrons know the exact condition of his account. If any discover mistakes in the bills they receive, we hope they will promptly inform us, and we will take great pleasure in making all needed corrections.

Books Received.—We have received the following new works:—

A Manual of the Principles of Surgery, Based on Pathology. For Students. By William Canniff, Licentiate of the Medical Board of Upper Canada, etc., etc., etc. Philadelphia: Lindsay & Blakiston. 1866. Price $1.50.

Diarrhœa and Cholera; their Origin, Cause, and Cure by Means of Ice. By John Chapman, M.D., etc., etc.

For sale by S. C. Griggs & Co., Lake St. Price 25 cents.

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HORATIO R. STORER, A.M., M.D., Professor of Obstetrics and Diseases of Women.

A. B. PALMER, A.M., M.D., Acting Professor of Materia Medica and Therapeutics.

HORATIO R. STORER, A.M., M.D., Acting Professor of Medical Jurisprudence.

FRANK K. PADDOCK, M.D., Demonstrator of Anatomy and Prosector of Surgery.

By the recent action of the Officers of the College, two weeks have been added to the Course, making it now eighteen weeks in length; and it will hereafter commence on the Thursday nearest the middle of June, instead of the first Thursday in August, as heretofore; thus giving time for a *full* Summer Course, without interfering with the Winter or Spring terms of other Schools.

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THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., Editor.

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Original Contributions.

ARTICLE XIX.

PRACTICAL REMARKS ON BLOOD-LETTING.

[CONTINUED.]

By D. B. TRIMBLE, M.D., Chicago, Ill.

In many of the diseases affecting the Respiratory Organs, especially the Phlegmasiæ, blood-letting is indicated.

In *Pneumonia*, particularly the common acute variety, bleeding is generally required. I know that this has been a question in which great difference of opinion has prevailed within the few last years, the advocates and opponents of the measure being, probably, nearly equal in number; but I am fully convinced of its beneficial effect in many cases, and that in some cases it cannot safely be dispensed with.

In the early stages of the disease, where congestion of the lungs, to a greater or less extent is almost invariably an attendant, if the patient is of an ordinarily robust constitution, free venesection will, in many, perhaps nearly all cases, prevent the formation of the stage of hepatization. Nor should we, in this disease, be altogether guided by the condition of the pulse. If it should be full, frequent, and tense we need not be afraid to bleed freely; but there are some cases, in which the pulse is small and oppressed, which calls for this measure even more imperiously than where the pulse is in the first condition men-

tioned. This may be caused by the congestion of the lungs being so great as to prevent the free circulation of the blood through them. If the dyspnœa is severe, and there is a livid and turgid appearance of the face, with the contracted pulse, the opening of a vein will generally relieve the distress in breathing, and the pulse will rise with the flow of blood, in which event we may proceed with boldness; but if the pulse fails under the effect of the operation, we should close the vein. When the disease is not broken up by the first bleeding, it may be repeated until the force of the circulation, the pain and the dyspnœa are wholly or partially subdued, and where general bleeding is no longer admissible, local bleeding from the chest may be substituted. Bilious Pneumonia is sometimes a complication of inflammation of the lungs and liver conjointly, and in this case, the treatment requires no modification from that applicable to the preceding variety; but where it arises from malarial influences, venesection must be more cautious and sparingly practiced. In Typhoid Pneumonia the system is generally so prostrate as not to bear it at all, and in the chronic form it is seldom necessary or beneficial, except in some instances, locally. In the cases of children, also, if used at all, it should be locally.

Since writing the foregoing remarks, I have read a well written address by Dr. YOUNG, of Aurora, published in the February number of the *Examiner*. While concurring with his views of the pathological condition of the lungs in pneumonia and of its symptoms, and also the indications for treatment, I cannot arrive at the same deductions in regard to the effect of blood-letting. He remarks that, "In pneumonia we first have an intense injection of the capilliaries of the lungs. The blood is dammed up, and the heart's action increased in consequence. The substances of the lung, the cells and parenchyma are gorged with blood or bloody serum. The functions of respiration and circulation are impeded, accelerated, and otherwise changed from their normal standard. There is too much blood, and not air enough in the lung, without any actual disorganization." "There is intense congestion of the lung, which constitutes the first stage of the disease—the period of high febrile action. If

this engorged and congested condition be allowed to continue, the lung, after a time undergoes further alterations," etc. "The object to be accomplished in this stage, is to unload the lung and its capillaries of the surplus blood; to equalize the circulation, and lessen the heart's action," etc. Now, as far as these quotations go, I entirely agree with the writer, but when we come to the *means* of accomplishing this desirable object, I differ, and believe Dr. MILLARD'S view is the correct one. I know of no drug, not even veratrum viride, (the article advocated by Dr. YOUNG,) that can act so promptly or thoroughly in unloading the lungs of their surplus blood as venesection, and my experience teaches me that patients recover sooner "from the disease" *and* "the bleeding" than from the disease without the bleeding. Of course, in "anæmic cases," much more caution would be necessary in the use of this remedy.

I am at the present time attending a lady suffering from a severe attack of pneumonia. She is 24 years of age, florid complexion, sanguine temperament. I found her with a flushed countenance and congested eye, a full, bounding, tense pulse, severe headache, severe burning pain in the right lung, especially the upper portion, considerable dyspnœa, and some cough, but little expectoration. What was the indication? Certainly to unload the congested lung, and, as a sequence, the other symptoms. I opened a vein by a large orifice, and abstracted 12 or 14 ounces of blood, when she became sick and faint, and I stopped the bleeding. Presently she vomited freely; the pores of the skin were opened; she breathed freely; and said the pain in her chest and head had disappeared. I ordered warm emollient applications to the chest, and a cathartic to be given at daylight, (it was then about 9 o'clock P.M.,) and left her. The next day, I found the fever had returned, together with the pains in the head and chest, though not so severely; the dyspnœa was considerably less, and there was a free expectoration of viscid and rusty sputa. I gave neutral mixture with spts. nitre, and subsequently, added a small portion of tart. antim. On Saturday, the pain in the chest continuing severe, the pulse still full and frequent, the face flushed, and skin hot,

I gave her tinc. verat. viride, in 5 drop doses, every fourth hour. Three doses brought on active emesis, which I found much difficulty in allaying. I then applied a large blister to the right thoracic region, which produced thorough vesication, and relieved the pain. I also gave ½ gr. opii and 2 grs. calomel at night. On Monday, (yesterday,) I found her free of pain, free of fever, with a natural countenance, expectoration free, and nearly clear of the rusty appearance. In the evening, more fever, which I attributed partly to the sufferings produced by severe strangury. This morning, (April 3d,) there is some improvement; and I recommenced the veratrum, in doses of 2 drops, alternating it with an expectorant and diaphoretic. At my evening visit, I found the gastric distress renewed, with some emesis, and I discontinued the veratrum. *4th.* Gave expectorants and diaphoretics in alternation. *5th.* Fever nearly gone; pain in the lung disappeared; cough and expectoration free; continued expectorants and gentle anodynes.

This has not been a case to fairly test the effect of the veratrum vir., as it was preceded by venesection; but its failure to reduce the pulse, after the evidence of its influence on the system, as shown by the prompt and severe effect it had on the stomach, would certainly induce me to hesitate before substituting it for a remedy so long and so favorably known in the cure of this disease. There may, however, be cases, probably those occurring in anæmic or debilitated constitutions, where it might have a better effect than in the one in which I tried it; and from the evidence in its favor, by gentlemen prominent in the profession, it must, in many cases, exert a salutary influence; but while some of the latest and best authorities still advocate judicious bleeding in pneumonia, I do not think we are justified in ignoring it. Among these authorities I may cite Professor JACKSON, of Boston, and Professor WALSHE, of London, who says, "Pneumonia is an inflammation; hence antiphlogistic remedies, and among these blood-letting, must hold the first rank among means calculated to bring it to a favorable issue." "We find some men ascribing results the most favorable to venesection, pushed to startling extremes, and others tracing

an equal or yet greater success to a system of absolute non-abstraction of blood. Lamentable, indeed, is the spectacle of hostile opinion and vacilating practice afforded by the history of the treatment of pneumonia, from the days of HIPPOCRATES to our own." Again, he says, "In acute sthenic pneumonia, here are few barriers to venesection." I fully coneur in the conclusion he arrives at, that "We have learned from our predecessors the evils of *over-bleeding*,—and seem, in my opinion, very much disposed, at the present day, to learn from ourselves the evils of *under-bleeding*."

In *Acute Pleuritis*, free venesection affords almost immediate relief to the severe pain and dyspnœa that generally accompanies this disease. I have had patients who, from the severity of these symptoms, were unable to lie in the recumbent posture, and in whom respiration was performed with great difficulty, so greatly relieved by this means, that they would be enabled, before the bleeding was checked, to take a deep inspiration, and lie in any position. There is no disease in which such speedy relief is obtained from bleeding, perhaps, as in pleurisy, and none in which it is more necessary, except apoplexy. The operation my be repeated if the pulse remains strong and frequent, and the pain returns. I seldom find it requisite, however, to resort to more than one free bleeding. After the reduction of the most active symptoms, if the inflammation has not been subdued, cups or leeches applied to the chest will probably be required. There are often cases of pleurisy of so mild a character, as to yield readily to remedial means, without either general or local bleeding; and I have frequently treated cases successfully without resorting to either. Early in my practice, when what was then called congestive fever was prevailing, to a great extent, in my locality, I was attacked with pleurisy, quite severely, and being anxious to resume my professional duties as soon as possible, I took a free bleeding from the arm, applied a large blister to the chest, took no medicine internally, and in four days, was attending my patients.

In the combination of these two diseases, or *Pleura-Pneumonia*, it is as applicable as in either of the simple diseases.

In *Pneumo-thorax*, when inflammation of the pleura supervenes, leeching, and if the system will bear it, occasionally venesection may be resorted to.

In *Emphysema*, when there is congestion of the lungs, or bronchial inflammation, venesection, or local bleeding, either from the chest or between the scapulæ may be required.

In *Phthisis Pulmonalis*, the only circumstances that demand bleeding are a tendency to pneumonia, or hæmoptysis, and this only if the pulse is full and strong. In doubtful cases, it may be dispensed with, and only used locally by cups or leeches to the chest.

In inflammations of the *Respiratory Passages*, bleeding is often of essential benefit.

In *Acute Bronchitis*, though not required to the extent or as frequently as in pleuritis, (and, as a general rule, the mucous membranes require this treatment much less actively than the serous,) yet when the pulse is strong and excited, the dyspnœa severe, and there is much soreness of the chest, venesection may be resorted to in proportion to the strength of the patient, and the severity of the disease. Prof. WALSHE'S rule is: "In the first stage," where the disease is extensive, the constitution strong, fever of the sthenic type, "from 8 to 14 ounces may be drawn;" but should not be repeated unless the "blood drawn is highly hyperinotic." If the disease is moderate, or if violent in feeble persons, "cupping between the scapulæ, or 8 to 15 leeches to sternum infra-clavicular or axillary regions."

In the *chr nic* form, where there is much irritation, moderate general bleeding may, in some instances, though rarely, be necessary; local depletion will be more applicable.

In *Influenza*, it is seldom required.

In *Cynanche Trachealis*, of the catarrhal variety, the disease may often be relieved by other remedial measures; but if this is not the case, and there should remain considerable spasmodic action, with a full and vigorous pulse, blood should be taken from the arm; and, perhaps, in a few very urgent cases, the temporal artery or jugular vein may be opened. Bleeding in children, however, should never be carried to syncope. If

fever, difficult respiration, pain within the throat or chest, and hoarseness of voice remain, evincing the continuation of inflammation, leeches applied to the throat or chest will often afford great relief. In *Pseudo-Membranous* croup, bleeding is seldom required; and in those cases following scarlatina, should never be used. In cases from other causes, when the inflammation is severe, leeching the throat or chest, or moderate venesection, may sometimes be useful.

In *Acute Laryngitis*, if the fever is high, with a full, strong pulse, free venesection, repeated if necessary, and followed by leeches applied over the larynx, if the disease is not previously subdued, will be frequently required. In *Chronic Laryngitis*, general bleeding is scarcely ever requisite; but leeches to the larynx, or cups to the nuchal region, are often useful.

Coryza, accompanied by headache, and a full, strong pulse, may be much relieved by moderate venesection; and if the frontal or maxillary sinuses are inflamed, leeches should be applied to the forehead, cheeks, or nostrils.

In *Pertussis*, accompanied by severe bronchial inflammation, venesection or leeching the chest may be resorted to; but in the great majority of cases, it is not demanded.

During the paroxysm in *Asthma*, if the pulse is full and strong, and there are symptoms of accompanying bronchitis, venesection will often give prompt and efficient relief. In the interval, if there is chronic bronchial inflammation, local depletion from the chest will be appropriate.

In inflammation of the *Bronchial Glands*, local depletion may be beneficial, if the disease is not produced by tuberculous or malignant causes.

Where congestion of the brain is present from *Apnœa*, venesection is sometimes necessary; when it should be taken from the jugular vein, as this relieves the brain more directly, and also the right side of the heart, which is usually overloaded.

ARTICLE XX.

ENTROPION AND TRICHIASIS OF THE UPPER LID; THEIR RADICAL TREATMENT, BY AN OPERATION, WITHOUT DIVISION OF THE SKIN.

By JOSEPH S. HILDRETH, M.D., late Brevet Lt.-Col. and Surgeon U.S. Vols., in charge of Desmarres (U.S. Army) Eye and Ear Hospital; Ophthalmic and Aural Surgeon to Cook County Hospital, Chicago, Ill.

That abnormal condition of the lid which makes its free border turn inward is called Entropion. Its causes are various; but the operation here proposed is intended to apply, mainly, to that form of the affection resulting from atrophy, or loss of the mucous membrane, and alterations of the tarsus.

Trichiasis is that condition of the eyelashes which brings them into contact with the globe. Certain modifications are designated as districhiasis and tristrichiasis, according to the subdivision of the deviated lashes into two or three rows.

These distressing conditions of the lid, so frequently fatal to the eye involved, can be relieved, permanently, by surgical or mechanical means only.

When confined to the lower lid the procedure is comparatively simple; but the upper lid, from its peculiar mechanism, is much more difficult of treatment.

To relieve that form of entropion referred to above and trichiasis, I resort to either destruction of the cilia or change their position on the tarsus. The former operation is admissable when but few of them are affected, and on account of extreme age of the patient or other conditions the latter becomes inexpedient. With these exceptions, the operation of "transplantation" is always to be preferred. This consists in dissecting up that portion of the lid which contains the deviated cilia from the tarsus, and then causing it to become so attached to the cartilage that the lashes assume and remain in their proper position.

Before describing the manner in which this may be accom-

plished, a few words upon the mechanism of some of the parts involved will not be inappropriate.

1st. The position and functions of the orbicularis are such that, when contracting, it tends to draw the ciliary margin of the external integument of the lid *over* the free edge of its cartilage.

2d. The levator, when contracting, tends to draw the free edge of the cartilage *away* from the ciliary margin of the skin covering it.

Hence two antagonistic forces, *both* tending to produce a projection of the ciliary border of the skin covering the lid over the corresponding edge of the tarsus, and thereby deviating the cilia inward.

This constitutes the principle obstacle to be overcome, and the one which not unfrequently militates against success in the operation of transplantation.

To counteract this difficulty, and at the same time avoid dividing the external integument, the following method of operating suggested itself:—

1st. An incision is made in the free edge of the lid, anterior to the orifices of the meibomian glands, and posterior to the deviated lashes.

It may extend from within one millimetre of the lachrymal punctum to the outer commissure, or further, if required.

2d. The tarsus is to be dissected in its whole breadth, and, as far as practicable, to the length of the incision just made, from the parts external to it, including the skin, orbicularis, etc.

The *former* is now under the influence of the *levator* only, the *latter*, that of the *orbicularis*.

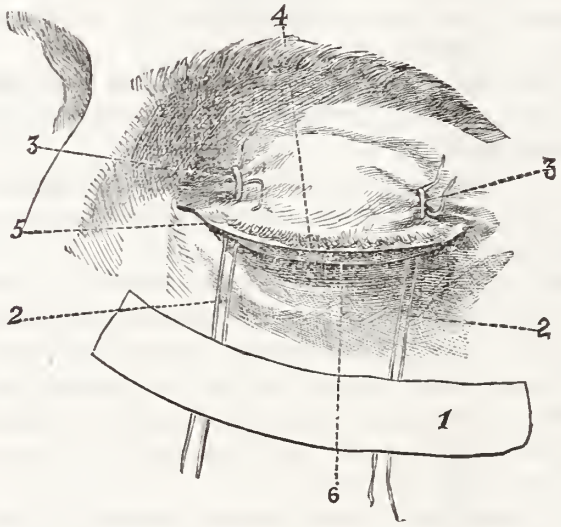
3d. The lid must next be reversed outward, and the tendon of the levator made to descend, so that a separate, coarse silk thread can be passed through it, close and parallel to the superior edge of the tarsus, and near both extremities of its separation from the external integuments. Both strands of each ligature must come through the mucous surface, and each loop should embrace horizontally about five millimetres of the tendon, taking care not to include any of the parts external to it.

The four strands of the two cords thus left projecting from the apperture of the lids should be left four or six inches long, in order to insure fastening to the cheek.

4th. Traction on these cords must next be made sufficient to bring the ciliary edge of the tarsus in contact with—in some cases below—the corresponding border of the opposite lid, and then firmly secured to the cheek by strips of adhesive plaster.

The skin and fibres of the orbicularis are now to be drawn upward and fixed to the tarsus in proper position by two *broad* stitches, inserted near the junction of the outer thirds with the inner third of the dissection of these parts from the tarsus.

The following cut, sketched immediately after an operation, shows the proper position of the parts:—



1, Represents method of securing cords which control the levator.

2, 2, The cords holding the levator.

3, 3, Stitches securing proper position of external integument.

4, Ciliary border.

5, Lachrymal punctum.

6, Border of tarsus, projecting, in this case, about two millimetres below the ciliary margin of the skin.

The strips of adhesive plaster should be numerous enough and the cords sufficiently long to guard against slipping.

The lower border is made to project a short distance below the ciliary margin of the external integuments, to allow for subsequent contraction. The extent to which it should project must depend upon the condition of its inner and lower edge. If this is well defined, it requires less than when rounded and irregular. In some cases, after adhesion has taken place, it may be well to remove a small portion of the lower border of the cartilage and thereby restore its normal shape.

The cords holding the levator should always be so arranged as not to rest on the cornea. They can be passed through the upper margin of the cartilage as well as the tendon, if the operator is fearful of their becoming detached too soon, and may remain in position a week, if desired; but three days, ordinarily, will be sufficient.

The outer stitches can be removed after the third day. But the removal of these as well as the long cords must of course depend upon the rapidity and firmness with which adhesion takes place.

Both eyes should be kept closed until the cords are removed.

Great care should be taken to so operate as to include *all* the deviated lashes. Should a few escape, they can be destroyed subsequently.

The advantages offered by this mode of operating are:—

1st. No wound of the external integument of the lid is required, which always produces more or less deformity.

2d. The tendency of the transplanted parts to suppurate, to fail to unite well, or of the cilia to subsequently fall out on account of imperfect nutrition, is avoided.

The circulation of the parts being but little interfered with, reunion is rapid and the result permanent.

The presence of the cords within the lids controlling the levator, like stitches required within the lids in other operations, does not prove to be a practical objection.

ARTICLE XXI.

THE PRIMARY SURGERY OF GEN. SHERMAN'S CAMPAIGNS.

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A perfect record of the primary surgery of a military campaign is a desideratum seldom obtained. Owing to the hurry of battle and the movements of troops, records on the spot are too often neglected, and any perfect estimate of the value of the various surgical operations rendered impossible. The authors of this article, who were both under the command of Gen. Sherman, viewed with great regret the almost total loss of surgical statistics which occurred in the first half of the war, and resolved on making a strong effort to preserve reliable records of the army in which they served. For this purpose, they made systematic preparations before any similar system was established by the War Department, and succeeded in obtaining a large mass of valuable information which has never reached the Surgeon-General's office. At a later period, the surgical records of the army underwent a reform, and furnished the means of obtaining still larger collections of material.

The subjoined tables contain almost the entire primary surgery of Gen. Sherman's army, during the campaigns in Georgia, leading to the capture of Atlanta, the famous "March to the Sea," the siege of Savannah, and the operations in South and North Carolina to the close of the war. With this is combined a complete record of the battle of Chickasaw Bayou, near Vicksburg, a portion of the other engagements in that region, and a large number of facts, gathered from Shiloh, Corinth, and other Western battles. The death or recovery of each patient is given, so far as obtainable, and if unknown is so stated.

Gen. Sherman's troops were always remarkable for the immense marches which they undertook. They were kept in the

lightest possible moving order, and, to a great extent, dispensed with the use of tents, except when stationary. Their history is briefly this:—

After the battle of Shiloh, they moved on Corinth and constituted the extreme right at the capture of that place. They then moved leisurely to Memphis, fortified that place, and occupied the surrounding region, engaging in many small skirmishes, but meeting no large body of the enemy. Thence, they moved by water to Vicksburg, where they engaged in the battles of Chickasaw Bayou, Arkansas Post, siege of Vicksburg, and the other important operations in that region. At the close of this campaign, they returned by water to Memphis, and thence undertook that prodigious march from the City of Memphis almost to Knoxville, and thence back again to Chattanooga. In this region were fought the battles of Mission Ridge, Resaca, Allatoona Pass, Kenesaw Mountain, Jonesboro, etc., etc., resulting in the capture of Atlanta, after a most magnificent campaign. After making proper arrangements, Gen. Sherman sent to the rear all his sick, wounded, and enfeebled men, and, with a force of over 65,000 seasoned and hardy troops, commenced his renowned "March to the Sea." On this march there occurred some sharp fighting, but, owing to the splendid arrangements of Med. Director MOORE, all the wounded were carried through, not a man being left behind. There was an opportunity here to observe the effects of land transportation upon wounded men, and to compare them with the results previously seen on the hospital steamers of the Mississippi River. The results were calculated to overthrow some of the received opinions on this subject. These wounded, though carried in ambulances an immense distance, suffered a much less mortality than the average of the hospital steamers, and even of many of the general hospitals. We infer from this, not that wheel transportation is free from all injurious effects, but that the pure air of an open ambulance, in spite of its shaking, renders it a safer place for a wounded man than the foul air of many general hospitals and hospital steamers, notwithstanding their quietness, their good food, and their soft cots. Where a por-

tion of the wounded of a battle are taken in ambulances to a general hospital at some distance, and another portion are kept in the field, it is uniformly found that those who are treated in the hospital do worst. This is often attributed to the shaking received on the route from the ambulance. The experience of the "March to the Sea" shows, however, that wounded men carried in ambulances from the day of battle to the termination of the case, *do better than in most general hospitals.* The prime necessity of a wounded man is pure air, and compared with this, all questions of diet, beds, and even shelter and repose seem to be secondary. This great truth was difficult to learn, and, to many of us, hard to believe, until it was taught by the stern experience of war, and proved by observations covering many thousand cases.

At the close of the war, marked by the surrender of Johnson's army in North Carolina, Sherman's forces marched to Washington. During this movement, an illustration of the evils of forced marches was displayed on a large scale. The troops were in the highest exhilaration of spirits, at their magnificent conquests and at the prospect of a speedy return home. Acting under this natural impulse, the 15th and 17th Army Corps virtually ran a footrace of several days duration, to see who should reach Richmond first. From 15 to 17 miles is a good day's march for infantry, and very few generals can get large bodies of men over as great an average distance as that, when moving day after day for a considerable time. On the 1st of May, these two corps marched 20 miles; on the 2d, 25 miles; on the 3d, 13 miles; on the 4th, 24½ miles; on the 5th, 18 miles; and on the 6th, 26 miles, when they halted near Petersburg. As the result of this enormous footrace of six days duration, 1630 men were found disabled from lameness and exhaustion, and had to be sent to Washington by steamers.

THE NUMBER OF THE WOUNDED.

The total number of wounded on our records, is 6122. Of these, 1042 are simply entered as wounded, with no additional information respecting them.

CAUSES OF WOUNDS.

The cause of the wounds is recorded in 4480 cases, as shown in the following table:—

Bullets, (nearly always conical,)	3980
Shells,	384
Buckshot,	25
Grape and Canister,	24
Torpedoes,	14
Pistol Shots,	12
Solid Shot,	11
Accidental Explosions,	8
Bayonets,	7
Splinters,	6
Stones,	3
Gun Caps,	3
Strippings of Cannon Shot,	3
Sabres,	0
Total,	4480

It will be seen at a glance, that the musket is manifold the most destructive agent used in war, causing seven-eighths of all the wounds. This, however, is owing purely to the numerical preponderance of the infantry. If we examine the table, it will be seen that 431 wounds were caused by artillery, which is about 10 per cent of the whole number. Now it is not probable that the enemy's artillery exceeded 7 per cent of his entire force, which shows that, in proportion to the men engaged, artillery is more destructive than infantry and cavalry. It is seen, also, that almost the whole effect of artillery is produced by shells, the wounds of which were 384 in number, while the solid shot, grape, canister, splinters, stones, and strippings of shot, altogether, only injured 47 men.

The buckshot are mostly from shotguns, in the earlier half of the war, when that weapon was extensively carried by the rebels. The remainder are from the old-fashioned round musket ball cartridge, also much used by the enemy. The uselessness of the buskshot is shown by the few wounds produced by them. The gun cap wounds were in the eye, and were caused

by the bursting of the percussion cap on the nipple of the gun.

Only 7 bayonet wounds are recorded, and a part of these were accidental. It will be remembered that though bayonet charges are often made, men seldom cross these weapons in close fight. One party or the other gives way before the collision occurs.

The 14 torpedo wounds were all received in the storming of Fort McAllister, near Savannah, from torpedoes planted in the earth to assist in the defence. The pistol wounds were almost all received in the same assault, in consequence, doubtless, of the rebel officers using their pistols to increase the amount of fire from the walls.

Not a single sabre wound is recorded, though these weapons were carried by all the cavalry and many of the artillery. The rebels, at the beginning of the war, had high expectations for their cavalry, owing to the great prevalence of habits of saddle travel in that region; but this, like many other mistakes, arose from not considering all their circumstances. The fact is, the nature of the country is such, that extensive cavalry operations, in the European sense of the term, are impossible. Almost every battle was either in the forest, or among such crags, ravines, or marshes that an opportunity for a regular charge by mounted men could scarcely ever be found. A body of highly-trained European cavalry placed in our Southern States would have been the most helpless piece of lumber that ever encumbered an army—incapable of defence, and useless for attack. Both sides, therefore armed their mounted forces with carbines, and sabres rusted idly in their scabbards.

DISTRIBUTION OF THE INJURIES.

The following table shows the nature and position of injuries, with their results, so far as traced:—

Wound.	Recov'd.	Died.	Result Unk'n.
Flesh wounds of head,	146	10	69
Non-penetrating flesh wounds of trunk,	214	7	87
Penetrating wounds of thorax,	26	127	76
" " abdomen,	7	109	31

" " pelvic viscera,-		4	
Flesh wounds of superior extremity,--	221	2	78
" " inferior " --	425	9	81
Wounds of large arteries,----------	5	3	2
Contusions, ----------	102	4	34
Concussions, ----------	6	2	2
Fractures of cranium, not penetrating the brain,----------	15	9	7
Penetrating fractures of cranium,-----		54	7
Comp. fractures of facial bones,------	45	8	15
Fractures of spine,----------	2	21	3
Compound fracture of scapula,--------	10		5
" " clavicle,--------	1	3	
" " shoulder-joint,--	63	20	17
" " humerus, ------	101	24	55
" " elbow-joint, ----	29	7	17
" " forearm, -------	88	8	50
" " wrist, ----------	13		8
" " hand & fingers,-	124	2	
" " pelvis, ---------	7	10	11
" " hip-joint, ------		9	1
" " femur, ---------	78	125	57
" " knee-joint, -----	24	45	41
" " leg, ----------	91	45	73
" " ankle-joint, ----	14	1	8
" " foot, ----------	53	3	23
Wounds not described, mostly flesh-wounds which usually recovered,-			2683
	1910	671	3541

In looking over the above list, it will be seen that it is impossible to determine the absolute ratio of mortality, owing to the great number of cases in which the results are unascertained. As the greater part of the deaths occur within 20 days of the injury, it is to be presumed that the deaths were much fewer among the cases which went to the rear and were lost sight of, than among those of which the result was ascertained. As a test of relative mortality, however, the table is valuable.

FLESH WOUNDS.

Simple flesh wounds, not involving large vessels, nerves, nor important cavities, produce very little danger. Of 1034 flesh

wounds whose results were ascertained, only 28 died, or a little over 2 per cent.

PENETRATING WOUNDS OF THE CHEST.

The danger of this class of injuries is in striking contrast to the safety of the preceding. Of 153 cases, whose results were ascertained, 127 died, and only 26 recovered, being a mortality of about 83 per cent. As there were 76 cases whose termination was not ascertained, it is probable that a larger portion of them recovered, which would reduce the rate somewhat. The Surgeon-General, from a list of 1272 cases, reports a mortality of 73 per cent.

PENETRATING WOUNDS OF THE ABDOMEN.

These are still more fatal than those of the chest. Out of 116 cases 109 died, making a mortality of 94 per cent, while only 31 cases remained in doubt. The Surg.-Gen.'s statistics differ widely from these. In a list of 543 cases he reports a mortality of only 74 per cent, which is only a trifle greater than that of the chest wounds. As this is contrary to all our personal observation, we are compelled to believe that the Surg.-Gen.'s statistics must be vitiated by cases of mere flesh wounds of the parietes, falsely reported by careless and hurried surgeons as penetrating wounds. This is the more likely, as the diagnosis is not always easy, and conjectures are often put into official reports instead of knowledge, in the hurry of field duty. Certainly there must be a great error somewhere in figures which make penetrating wounds of the abdomen scarcely more dangerous than those of the chest.

We found the proportion of deaths so great that we seriously contemplated the heroic experiment of opening the abdominal cavity, washing it out, and stitching the wounded intestine to the external orifice, as a desperate resort for a desperate injury; but not finding any authority to justify us, we did not finally venture on it. We deem the suggestion, however, worthy of serious consideration. Wounds of the large intestine appear, for some reason, to be more hopeful than those of the small bowel.

WOUNDS OF THE PELVIC VISCERA.

These were few in number and uniformly fatal, in our recorded cases. We learned, however, of cases that recovered in other departments.

FRACTURES OF THE CRANIUM.

These fractures should be considered in two classes, viz.:— the penetrating, and the non-penetrating. Those in which a bullet, or even a buckshot, penetrates the brain are the worst of all wounds. Out of 61 cases on our list, 54 are known to have died, not a single one was ascertained to have recovered, and only 7 remained in doubt. The cases, however, in which the bullet only fractured the bone and lodged or glanced off without penetrating the brain were widely different in their results. Out of 24 cases only 9 died. The Surg.-Gen.'s reports mix both these classes together, so that it is impossible to compare his results with our observations. In two of the non-penetrating fractures, epilepsy is ascertained to have ensued.

FRACTURES OF THE SPINE.

Out of 26 cases 21 died, only 2 recovered, and 3 were unascertained. Entirely similar to this is the official record of the Surg.-Gen., who has a list of 187 cases, out of which 180 died.

FRACTURES OF THE SCAPULA AND CLAVICLE.

Fractures of the scapula gave us no ascertained case of death, but out of 4 fractures of the clavicle 3 died; but the fatal result in these cases was owing to penetration of the lung, and other complications.

FRACTURES OF THE SUPERIOR EXTREMITY.

These are not very dangerous, and generally do well under conservative treatment. The table shows that the danger diminishes as the location of the injury recedes from the shoulder.

FRACTURES OF THE HIP-JOINT.

Of 9 ascertained cases, not one recovered. The statistics at Washington show similar results. Of 82 cases, only 2 survived.

FRACTURES OF THE FEMUR.

These are a most dangerous class of injuries. The brittle, ivory like tissue of the shaft of the femur is often comminuted by the force of a bullet into a hundred fragments, which are spread out into the muscular tissue of the thigh with all the force of an explosion. The shock, therefore, is tremendous, and a large portion of the patients sink without reaction. Great efforts have been made to improve this result, by new modes of treatment, but still the fact remains that the majority of gunshot fractures of the femur are fatal. Our table shows 78 recoveries and 125 deaths. The report of the Surg.-Gen., in like manner, shows 462 recoveries and 689 deaths, which gives nearly the same ratio.

FRACTURES OF THE KNEE-JOINT.

These also are fearful injuries. Out of 69 ascertained cases, we lost 45, which is a mortality of 65 per cent. The tables of the Surg.-Gen. are much less favorable. They show 598 deaths out of 770 cases, which is a mortality of nearly 78 per cent. This result is mainly attributable to the fact that almost all our cases were treated by primary amputation, while many of the Surg.-Gen.'s cases were treated conservatively, which in this injury is synonymous with destructively.

AMPUTATIONS.

The following table shows the cases of amputation in which the results were ascertained:—

	Recovered.	Died.	Per cent of Deaths.
Primary amputation at Shoulder-joint,---	11	2	15
Secondary " " ---	2	1	33
Primary " Arm, ----------	55	5	8
Secondary " " ----------	4	1	20
Primary " Forearm,--------	21	2	9
Secondary " " --------		1	
Amputation at Hand,----------	4	1	20
" Fingers,----------	60	1	1½
Primary amputation, Upper 3d of Femur,	5	13	72
Secondary " " "		2	
Primary " Middle 3d "	11	14	56

Secondary "	Middle 3d of Femur,	2	2	50
Primary "	Lower " "	37	24	40
Secondary "	" " "	24	12	33
Primary "	Leg,	60	24	29
Secondary "	"	7	4	36
Amputation at Ankle-joint,		3	1	25
Pirrogoff's amputation,		2	1	33
Syme's "			1	
Chopart's "		2		
Amp. at other parts of Foot and Toes,		18	1	5

The following figures, extracted from Circular No. 6, of the War Department, will serve as a basis of comparison with the above:—

	Recovered.	Died.	Per cent of Deaths.
Amp. of Fingers and parts of Hand,	1778	29	1.60
" at Elbow,	19		
" Forearm,	500	99	16.52
" Arm,	1535	414	21.24
" Shoulder-joint,	144	93	39.24
" Toes,	784	6	.75
Partial amp. of Foot,	108	11	9.24
Amp. at Ankle-joint,	58	9	13.43
" Leg,	1737	611	26.02
" Knee-joint,	52	64	55.17
" Thigh,	568	1029	64.43
" Hip-joint,	3	18	85.71

The following list of amputations is compiled from the records of Surgeon-General Chisholm, of the Confederate Army:

Place of Amputation.	Recovered.	Died.	Per cent of Mortality.
Primary amputation Shoulder-joint,	54	25	31
Secondary " "	8	20	71
Primary " Arm,	252	42	14
Secondary " "	87	53	37
Primary " Elbow-joint,	3	1	25
Secondary " "	23	6	26
Primary " Forearm,	61	8	12
Secondary " "	35	10	22
Primary " Hip-joint,	1	2	
Secondary "	1	1	
Primary " Thigh,	213	132	38
Secondary " "	43	119	73

Primary amputation	Leg,	219	95	30
Secondary "	"	76	74	49
Primary "	Chopart's,	13	3	
Secondary "	"	7	1	
Primary "	Syme's,	2		
Secondary "	"	4		
Primary "	Pirrogoff's,	2	2	

AMPUTATIONS AT THE SHOULDER-JOINT.

For this operation we find the following rates of mortality:—

In Sherman's Army, prim. and sec.,	23	per cent.
U.S. Surg.-Gen.'s tables, "	39	"
Confederate Army, primary,	31	"
British wars with Napoleon " (Guthrie)	28	"

AMPUTATIONS OF THE ARM.

Mortality in	Sherman's Army, prim. and sec.	10	per	cent.
"	Surgeon-General's Tables "	21	"	"
"	Confederate Army, primary	21	"	"
"	European Armies, (Guthrie)	23	"	"

We saw no cases of amputation at the elbow.

AMPUTATIONS OF THE FOREARM.

Mortality in	Sherman's Army, prim. and sec.	12	per	cent.
"	Surgeon-General's tables "	17	"	"
"	Confederate Army, primary	19	"	"

AMPUTATIONS AT THE HIP-JOINT.

This operation was not resorted to in any instance, consequently we can add nothing to the general stock of knowledge on that point. The Surgeon-General reports 21 cases, 18 of which died.

AMPUTATIONS OF THE THIGH.

		Mortality.		
Primary Amp. in	Sherman's Army	49	per	cent.
Secondary "	" "	61	"	"
Primary "	Confederate "	38	"	"
Secondary "	" "	73	"	"

The Surgeon-General does not distinguish between primary and secondary cases, and, therefore, his statement is not entered here for comparison.

The death-rate varied very much, according to the distance from the body, as the following statement shows:—

Mortality of Prim. Amp. in			Upper 3d of Thigh			----72	per	cent.
"	"	"	Middle "		"	----56	"	"
"	"	"	Lower "		"	----40	"	"

AMPUTATIONS AT THE ANKLE-JOINT.

These are few in number, but, so for as they go, confirm the superior safety of SYME'S operation, as compared with PIRROGOFF'S. Adding our own figures to those of the rebel army, we find the following result:—

	Recovered.	Died.
Syme's Amputation----------	6	1
Pirrogoff's " ----------	4	3

PIRROGOFF, himself, is said to have abandoned his operation, on account of the frequent necrosis of the stump of the os calcis. Certainly, the military record is against it, and yet we have found it in civil practice a very useful and comparatively safe operation.

It will be noticed above, that there is, apparently, a much less mortality in our statistics of amputation than in those of our Surgeon-General, or those of the Confederate Army. This arises, partly, from the fact that our cases are nearly all primary, our observations being mostly confined to field service, while the records of the Surgeon-Generals of both armies contain an excess of secondary operations, from the fact that the general hospital cases were all faithfully reported to them, but the field cases were not so fully recorded. Their tabular results are, therefore, affected by the greater mortality which always belongs to secondary operations. The U.S. Surgeon-General has not stated separately the primary and secondary cases, so that we are unable to compare Sherman's army in this matter with the rest of the Union forces. The Confederate statistics, however, are distinguished into primary and secondary, and still show a greater mortality than Sherman's in most of the amputations.

RESECTIONS.

The following table gives a view of all the resections whose results were determined:—

Resections in Sherman's Army.

Operation.	Recovered.	Died.	Per cent of Deaths.
Prim. Resection of Shoulder-joint	18	8	31
Sec. " "	23	5	18
Prim. " in continuity of the Humerus	7	1	12
Sec. " " " "	5		
Prim. " of Elbow	6	2	25
Sec. " "	1	1	
Prim. " in continuity of Forearm	19	1	5
" " " Femur		4	100
Sec. " " "	4	4	50
Prim. " of Knee	1	1	
Sec. " "		1	
Resections in continuity of Tibia	5		
" " Fibula	3		
" " Clavicle	1	4	80

Resections reported by the U.S. Surgeon-General.

Operation.	Recovered.	Died.	Per cent of Deaths.
Prim. Resection of Shoulder-joint	160	50	23
Sec. " "	183	115	39
Resection of continuity of the Humerus	133	42	24
" the Elbow	224	62	22
" in the continuity of Forearm	217	32	13
" of the Hip-joint	4	26	87
" in the continuity of the Femur	6	32	84
" of the Knee	2	9	84
" in the continuity of the Tibia	48	11	19
" " " " Fibula	60	15	20

Resections in the Confederate Army.

Operation.	Recovered.	Died.	Per cent of Deaths.
Prim. Shoulder-joint	28	13	27
Sec. "	19	7	21
Prim. Elbow-joint	22	3	12
Sec. "	23	6	24
Hip-joint	1	1	
Knee-joint	2	2	

From an examination of these tables, it will be seen that resections do not follow the law of amputations in respect to primary and secondary operations. In Sherman's army, primary resections were generally more fatal than secondary, though the reports from other parts of the army do not fully conform to the same rule.

From comparison of the various tables, it will be seen that resection of the shoulder is preferable, on the score of safety, to amputation, and, accordingly, it was generally given the preference by surgeons, wherever the choice presented itself. In addition to the greater safety of the operation, there is the important consideration of the usefulness of the limb, which, in spite of the loss of bone, is very valuable. The same remarks are applicable to resections of the elbow and wrist. In short, the military surgeon may, in respect to resections of the superior extremity, guide himself by the rules of civil surgery.

The writers of this article had no experience with military resections of the hip-joint, as we deemed that the patient's chance was better without the operation than with it. The Surgeon-General's tables give it a mortality of 87 per cent.

For similar reasons, we abstained from resections of the knee-joint. The impossibility of transporting such patients in an ambulance is obvious at a glance. Wounds of the knee-joint were, therefore, generally treated by amputation at the lower 3d of the thigh. Of three such resections which fell under our notice, two died. The Washington statistics give a mortality of 84 per cent to resection of the knee, while the primary amputation in the lower 3d of the thigh only gave, in Sherman's army, a mortality of 40 per cent.

RESECTION IN THE CONTINUITY OF BONES.

This class of resections is seen in the above tables to be considerably more fatal than amputations of the same parts, a fact which is well proved, but difficult to explain. Primary resections in the continuity of the humerus had, among us, a mortality of 12 per cent, and amputations of only 8 per cent. In attempting the same resection on the shaft of the femur, 66 per

cent died, which is 10 per cent worse than our experience in primary amputations in the middle of the thigh. Still, in the superior extremity, the use of the hand is so important that the operation may be risked, even on the humerus, in favorable cases, and in the inferior extremities, it is quite proper on the fibula and metatarsals. In the femur, the tibia, and the clavicle it is very fatal, and should not be performed, except in secondary cases accompanied by necrosis.

CONSERVATIVE SURGERY.

The question whether to operate or trust to nature is often a difficult one, which can only be decided by knowing what the risk is in cases not operated upon. The following tables throw a good deal of light upon this subject:—

GUNSHOT FRACTURES TREATED WITHOUT OPERATION.

Fracture.	Recov'd.	Died.	Pr ct. Mort. Sh'rm'n's Ar.	Pr ct. Mort. Sur.-Gen. Rep.	Pr ct. M. Reb. Ar.
Shoulder-joint	35	7	17		35
Humerus	33	7	17		
Elbow-joint	9	3	25		11
Forearm	43	1	2		
Wrist-joint	5				7
Hip-joint	4	10	71	100	100
Femur	64	68	51	63	
Knee-joint	25	42	63	84	51
Leg	33	17	34		
Ankle-joint	9	1	10		20
Foot	21	1	5		
Cranium {penetrat'g & non-pen}	5	13	78		
Face	15	1	6		

Table of Wounded Joints, treated in the Confederate Army without amputation (from Surg.-Gen. CHISHOLM'S Report):—

Joint Wounded.	Recovered.	Died.	Joint Anchylosed.	Pr ct. of Deaths.
Shoulder	11	6	3	35
Elbow	50	5	22	11
Wrist	26	2	7	7
Hip		8		100
Knee	50	53	21	51
Ankle	23	6	1	20

There is something inexplicable in the Confederate statistics, as given in this table. That out of 103 wounds of the knee-joint, only 21 should become anchylosed, and only 53 died under conservative treatment, is, certainly, contrary to the experience of the rest of the world, and suggests the possibility either of typographical error, or else that some cases of wounds about the knee are included which did not penetrate the cavity of the joint.

The following conclusions are, on the whole, warranted by the figures:—

Conservative treatment of wounds of the shoulder-joint appears, at first glance, to be more successful than either resection or amputation. It is to be remembered, however, that the milder cases were saved and the worse ones operated upon, so that the comparison cannot be pressed. The impression made upon us by our experience, is this:—Cases where the joint is simply opened, or slightly fractured, should be treated without operation. Where the joint is much comminuted, resection should be preferred, and where the comminution is accompanied with destruction of the great axillary nerves and vessels, amputation is imperative.

In the elbow-joint, the mortality of the conservative treatment with us was 25 per cent, that of primary resections, 25 per cent, that of primary and secondary resections together, 33 per cent, and of primary amputation above the elbow, only 8 per cent, showing that amputation is the safest, resection the next, and conservative the most destructive treatment of wounds of the elbow-joint. Our figures for primary amputations above the elbow are more favorable than the experience of the rest of the world bears out. The mortality for primary and secondary amputations of the arm together in the U.S. Surgeon General's report, is 21 per cent, but even this is better than treatment without operation. On the whole, we prefer resection in all gunshot fractures of the elbow-joint in which the principal nerves are intact, but in case of destruction of these, amputation is the best. Conservative treatment will do in very slight fractures.

Compound fractures of the hip-joint were, in our experience,

treated conservatively, with a mortality of 71 per cent. The U.S. Surgeon-General, however, as well as the Rebel statisties, gives a mortality of 100 per cent for such treatment. These fractures are not always easily distinguished from extra eapsular fractures of the neek of the femur, and it is possible that our results are made too flattering, by the inclusion of some of the latter in the list. The subject is one which needs further investigation.

Fracture of the femur between the articular extremities is a very fatal accident. A large portion of the patients die of shock during the first three days, under any treatment which may be adopted. In comparing conservative treatment with amputation, it must be remembered that fraeture of the shaft of a femur, if amputated, requires the operation at the middle or upper third; hence, amputations at the lower third are exeluded from the comparison.

Our results are, as follows:—

Mortality of cases treated without operation,--- 51 per cent.
" " " by resection in continuity of the shaft,---------- 66 "
Mortality of amputa. at Middle and Upper 3d, 63 "

showing an advantage of 10 or 15 per cent of treatment by splints and extension over operative proeedures. We, therefore, were led to diseourage amputation for fractures of the femur, except when necessitated by destruction of the nerves and vessels.

Great interest has been excited by the question whether amputation should be performed for penetrating wounds of the knee-joint. Our figures give for primary amputations just above the knee a mortality of 40 per cent; and for treatment of perforated knees, without operation, a death-rate of 63 per cent; giving a balanee of 23 per cent in favor of primary amputation.

The Surg.-General recommends primary amputation at the knee-joint, and gives its statistieal mortality in our army as 35 per cent. This operation was not practieed under our observation, but the evidence in its favor has become so strong that

in future wars it will probably be preferred in most cases of perforated knee-joints.

Treatment of fractures of the leg, without operation, give about the same risk as amputation below the knee. This method, therefore, should be adopted wherever there is hope of preserving a useful limb.

TREPHINING.

Only six cases of trephining were traced to their results. Of these, three were for wounds penetrating the brain, and all died. The other three were for depressed fractures not penetrating the brain, and all recovered. The statements of the Surgeon-General absurdly class the penetrating and non-penetrating fractures together, which renders it impossible to collate his figures with ours. The opinion which we have arrived at is, that non-penetrating gunshot fractures of the cranium require trephining in military as well as in civil practice, when the fragments are depressed, but that cases in which the bullet has passed into the brain are not benefitted by the operation, though as they all died alike, we can scarcely say that any harm was done. In penetrating fractures, the chief mischief is too deep to be helped by the trephine.

ANÆSTHETICS.

The anæsthetic used was almost exclusively chloroform. This agent was administered in about 3000 cases, and produced two deaths. The first death was that of Private J. W. Whitlock, Co. H, 111th Ill. Inf., wounded in the elbow-joint. On *post mortem* examination, the pericardium was found adherent and the lungs consolidated, showing prior disease of both organs.

The second case showed nothing on *post mortem* examination to account for the fatal result.

We have endeavored in these pages, to give a condensed and truthful statement of the materials in our hands, in order that impressions and facts, now fresh and valuable, may not be lost to the world. In conclusion, we wish to put on record an opinion impressed upon us by very large and varied observation, but which it is impossible to put in a tabular form, and it is

this:—A very great error has been committed in the anxiety of Medical Directors to gather the wounded into large general hospitals, where cots, white sheets and pillow-cases, and luxurious diet shall contribute to the comfort of the soldier, and where the general air of compactness and good order, and the fine appearance of the buildings shall favorably impress the public. It often happens that those very hospitals, which by their show of cots, sheets, clean floors, and well-cooked meals, extort praise from visitors, newspaper reporters, and even Medical Inspectors, are hothouses of death to the inmates, in consequence of the impossibility of perfect ventilation in the interior. Our experience shows, that in many of these fine hospitals soldiers die in large numbers, who would have recovered had their wounds been treated under a tent or a tree, on their blankets, by their regimental surgeons.

The very first necessity of a wounded soldier is absolutely pure air, such as cannot be had in most of the buildings selected for general hospitals, but when this requirement is fully met, it is astonishing what vigor the system often shows in repairing its injuries. The next great improvement needed in Military Surgery is a system of general hospitals which shall furnish air as pure as that of the open fields. When such a system shall be devised and put in operation, war will be stripped of a large percentage of the mortality at present following in its train.

Note.—The Confederate statistics given are derived from the Richmond *Medical Journal* and from a work issued by the Confederate Surgeon-General, for the instruction of his medical officers.

Selections.

SOME NOTES ON ARROW-WOUNDS.

By ELLIOTT COUES, M.D., U.S.A.

During a residence of more than a year, in the interior of Arizona Territory, as surgeon of a United States Post, (Fort Whipple,) at a time when both our civil and military force was

in incessant warfare with the hostile Apaché Indians, the writer had numerous cases of arrow-wounds under his care, in private practice as well as in the line of official duty. As reports of injuries of this sort are by no means often brought into general notice, to the following desultory notes of wounds produced by the peculiar stone-headed arrows of the Indians just named, some little interest may possibly attach.*

The Apaché arrow consists of a light, tough reed, nearly or quite three feet long, at one end tri-feathered and slotted for the bow-string in the usual manner, and painted with some emblematical red and blue waved lines. Into the distal extremity is inserted a short and slender, but stout piece of firm wood, some eight or ten inches long, hardened and straightened in the fire, and thickly besmeared with a black, gummy substance.

The head is apparently a small and trifling affair, compared with the results it is capable of producing. It is made from some species of quartz, chalcedony, obsidion, etc., and is always either white or black in color. It is an inch or somewhat less in length, by about a-third of an inch in greatest width; in shape a narrow isosceles triangle. It is quite uniform in size and shape. I think I never saw one much over the dimensions stated. It is very thin, and its apex is chipped to an extremely fine point. Its sides have usually three, sometimes only one or two jagged notches near the base. Its bulbs are generally long and sharp. The base is notched where it rests on the shaft. In the end of the hardwood shaft, just described, is a slight notch, actually not so deep as that which receives the bow-string; on which is dropped a little very tenacious gum; and then the stone-head is lightly pressed into place. There is no projecting handle for insertion into the wood. No thongs or wrapping of any sort are used; and so frail is the connection between the head and shaft, that the Indians themselves are obliged to carry their arrows with great care.

The bow is a large, strong one, four to six feet long; almost straight to near either end, where it is abruptly much curved.

It will be seen that this weapon, the injuries from which we are to notice, is quite a different affair from the short, stout, heavy arrow, with a large and long triangular, or somewhat diamond-shaped soft metal head, bound by sinews to the shaft, used by the mounted Indians of the plains; although they agree

* For a very elaborate memoir on arrow-wounds, see Dr. G. H. Bill, U.S.A., in the *Amer. Journal Med. Sci.*, for Oct., 1862, p. 365; and compare nature of wounds by the strong, large, metal heads of the Navajos with those indicated in this paper.

in the respect, that both make very ugly wounds. I do not think that the penetrative force of the Apaché arrow equals that of the Comanché or Navajo. The characteristics of the Apaché arrow-head are essentially these: 1, its minute size; 2, its jagged edges and angles; 3, its extreme friability; 4, its very ready separation from the shaft; 5, its probable poisoning in some instances.

Case. Illustrating consequences of minute size of arrow-head. Arrow horizontally entered outer aspect of thigh of a large muscular man, its wide axis parallel with fibres of m. vastus ext., severed profunda or one of its larger branches; hæmorrhage to fainting, and repeated. Saw patient three hours from reception of injury; after he had ridden, supported on either side, for five miles. He had pulled out the shaft immediately upon being struck. Very moderate swelling or increased heat of limb. Orifice of entrance a simple slit, 3-10ths of an inch long. By no amount of delicacy and patience in the manipulation of a small silver probe, with the limb in various positions, could the former be introduced more than about an inch. Head consequently undetectable, and therefore uncxtractible. Expectant treatment necessitated; nothing special to be done beyond ordinary constitutional care. The tumefaction rapidly abated; and the wound closed completely in a few days. No abscesses, or unusual amount of irritation from presence of stone; but the limb was weak and practically useless for several weeks. Two months afterward, the patient could *feel* the head on the inside of the thigh, close by the femoral; and motion, especially horse-back exercise, increased the vividness of his intelligent impression that there it was; although it was not to be detected by surgical palpation. It has already, or doubtless will be hereafter extracted by cutting in a manner not widely dissimilar from that for the operation of tying the femoral near the apex of Scarpa's triangle. This case is so well expressive of the essential characters of several others that fell to my lot, that they need not be here detailed. I soon learned to regard the innocent-looking little slit with anxious doubts of its directing me to the cause of it, when I saw it parallel with muscular fibres.

The above described kind of injury is evidently as near a "punctured" wound in essential characteristics, as can well be made by any edged weapon.

The jagged edges and sharp angles of the head, do not seem to be, at least in their affects upon muscular tissue, as pernicious as they are malevolent in appearance. They certainly

must decrease rather than aid the penetrative force or the arrow; and the amount of laceration they are capable of producing is by no means a serious complication. I have thought indeed in some instances, that this degree of laceration was the reverse of deprecable; affording more facile entrance to the probe, and afterward more ready exit to the inevitable pus.

At the same time the effect of these notches and angles is of importance with reference to the chances of the encysting of heads which cannot be traced and extracted. As might be expected, it is exceedingly rare that these sharply triangular and jagged bits of stone excite so little disturbance that the encysting process can be accomplished. This can only take place under some peculiarly favorable circumstances, as to position, etc. The irritation is almost invariably sufficient to excite suppuration; consequent abscesses, (unless the wound is very open;) and thus a gradual working of the head toward the surface; this "pointing" being often at a considerable distance from the place where it might have been expected. It is only rarely, I think that the head works out, *retrorsum*, along the track of its entrance.

The extreme friability of the head produces results which must be taken into consideration, as one of the most common and troublesome features of the wound. When the head impacts on bone—and it generally traverses soft tissue till halted in this way—the chances of its shivering into bits vastly preponderate over the probability of its becoming fixed or glancing.

Case. Arrow-head struck under edge of malar, rasped off some periosteum, shivered as it glanced downward, and over twenty minute fragments, (in addition to two or three large ones extracted,) came away gradually from the fat and muscle lying under this bone.

Case. Arrow-head struck transverse process of eleventh dorsal vertebra; shivered; fortunately without glancing into the thorax. Three large pieces extracted immediately. Numerous smaller fragments came away in the suppuration.

Case. Arrow-head struck inferior angle of scapula. A large piece was at once extracted, which represented the whole of the head except about a fourth of an inch of its apex, which was firmly fixed in the bone. As this bit would not have been extractible except by much cutting, and then prying and wrenching, I somewhat hesitatingly allowed it to remain; possibly an injudicious procedure, although warranted by the result. The wound closed completely in about two weeks, and there

were not, at least during the several subsequent months that I was with the patient, any unfavorable symptoms.

The above cases could be multiplied, but are sufficient for my present purpose. It will be evident that we need not be afraid of a little judicious audacity in the division of muscular tissue, while cutting a way for our forceps, since the enlarged orifice is favorable, if not indeed necessary, for the ready discharge of pus as well as of quartz débris. This same indication, so important to be fulfilled must also govern all subsequent dressing of the wound. *Dress openly;* better not dress at all, than occulade the orifice. Particularly be careful that subjacent tissue is sound, before allowing integument to reunite.

Occasionally an arrow-head will neither shiver nor impact; but on striking bone in an exposed situation, *e.g.*, tibia, ulna, etc., will rebound with great force. CASE. Head struck middle of outer aspect of ulna, and rebounded. Resulting injury more of an ulcer than anything else. A scab rapidly formed; seeing which I merely protected it from friction by the clothes, and it "got well itself" directly.

So frail is the connection between the head and the shaft, that in all my little experience, I never saw or heard of an instance in which the former was removed on pulling out the latter. I do not see very well how it can occur, provided the head be buried beyond its barbs. For the matter of that, as the shaft produces ordinarily next to nothing of the sum total of injury, we may regard the missile as practically consisting of the head alone. The shaft is almost invariably seized and jerked hurriedly out by the patient at the moment of being struck. The not the less comical because painful sight of a man thus porcupinized rarely falls to the surgeon's lot, unless he is verdant or unlucky enough to get mixed up in a bush fight himself. But we must receive with great caution all opinions expressed by the patient, to the effect of his having withdrawn the head or even the whole of the shaft; for in the flurry of the moment, he does not examine what he so hurriedly pulls out; and the head he found in his clothes and presents triumphantly in proof was just as likely detached from some other arrow, which had not force to penetrate further. Again, this frantic wrenching at the stick may break off a portion of it inside. We cannot examine the wound too thoroughly before making a diagnosis. Let the following most interesting, and decidedly most mortifying case, which occurred in my private practice, exemplify these remarks.

CASE. J. Blank, young and vigorous and moderately mus-

cular subject. Arrow entered muscles on side of back of neck, and coursed downward and forward. The head was plainly to be felt just below the clavicle of the same side. The patient stated he had pulled out the shaft immediately on being struck, some twelve hours previously. Only experienced pain when my finger pressed on the head. Feeling the latter so plainly, in front, under the clavicle, and apparently only about half an inch deep, it by no means occurred to me to stick a probe into the wound some six inches or more, for the sake of feeling it from behind; but I at once prepared to extract the head. Seated on a stump, and my patient on a barrel in front of me, the heat and flies intolerable, and only a soldier to assist, I cut carefully down upon the head by an incision parallel with the under edge of the clavicle. I found it lying on the first rib, *between it and the subclavian artery*, which latter had been somewhat shoved aside, but luckily quite uninjured. The artery was directly under my finger, and I think I could have tied it in the last portion of its course, by slightly enlarging upon the operation. I extracted about three-fourths of the head in one large piece, and afterward nearly all the rest in another smaller fragment; a little bit, however, was left in, as I could not readily find it, and no one cares particularly to poke about with a probe in the supra-clavicular triangle. A great deal of pus had followed my reaching the head with a knife; the axilla was padded and strapped tightly in view of possible abscesses; and the wound dressed openly, trusting that the fragment would come out with the suppuration; as indeed was shortly afterward the case.

But still the cut I had made continued to discharge inordinate quantities of pus. The original wound meanwhile quite healed; while the cut whence the head was extracted assumed gradually the characters of a fistula and showed no signs of closing. The patient became weak and emaciated, with considerable hectic fever, though at no time confined to his bed. Serious and distressing pulmonary symptoms had come on, chiefly indicating abscess in the chest. The patient not being under my charge except for a few days immediately after the operation, I only saw him occasionally and accidentally, and therefore cannot give more detailed notes than the above. Meeting him one day, I was surprised to learn that a piece of the shaft of the arrow, about three inches in length, had been extracted from his chest, far into which it had gradually worked. At the time I operated, it must have been lying in the muscles of the side of the neck. Simple introduction of the probe from

behind would have revealed its presence and saved the poor fellow much suffering, and myself much mortification; as it could have been drawn out with the utmost ease then, had I had an idea of its presence.

"Do the Apachés poison their arrows?" is a question often asked me; and it is currently reported that they dip the heads in a deer's liver, after forcing a rattlesnake to bite it, and then allowing it to putrefy. I reply most unhesitatingly that as a general rule they *do not*, no other than the consequences of mechanical violence following in the vast majority of instances. Still I cannot affirm that such is never the case; witness the following case, in which it is difficult to account for death except upon the supposition that some toxic agent complicated a simple wound.

Case. Private G. S., Co. F. 5th U.S. Inf. Arrow-head entered the muscles of the back, just over the lower part of the shoulder-blade; passed very obliquely upward and a little inward, chipping a bit off the scapular spine. The orifice of entrance was very small, and rounder and more jagged than usual. A probe passed to its full length readily enough, but no foreign body could be felt by it. The man was positive that the head had come out when he drew the shaft; a statement, however, to be regarded as very problematical. He complained most of pain in the muscles of the side of the neck, which was swollen and stiff in about the locality to which I had been able to pass the probe. No suspicious substance could be detected after careful palpation; and a simple expectant plan of treatment was forced upon me. The wound soon began to suppurate profusely; the discharge at first tolerably "laudable," but quickly changed to a thin, ichorous, reddish-brown fluid; mixed with which was a considerable quantity of almost pure, very dard, clotted blood; and later, shreds or masses of apparently disintegrated tissue. The orifice was enlarged; and every precaution taken to facilitate discharge and prevent abscesses; nevertheless, they began to form rapidly, and at points down the back more and more remote from the original seat of the injury. These were evacuated as soon as detected. The patient began to rapidly sink under the profuse discharge; anorexia, insomnia, vomiting, diarrhœa, and an excessively irritable and desponding state of mind, successively made their appearance; in the latter stages there was considerable delirium; and finally, in spite of all that could be done for him, he died comatose, about three weeks after receiving the injury.

Autopsy revealed that all the muscles of that side, from the

occupit nearly to the hip, were in a state of disintegration; dark-colored, soft in consistency, looking in fact much like decaying liver, and having and exceedingly offensive odor. The arrow-head could not be found, after a most diligent search. It had not penetrated the thorax, nor yet had it worked into the abdominal cavity; for the parieties of both were intact. To this day the exact course of the arrow, and why it should have produced such anomalous results remain a mystery to me. But I can affirm positively that the injury which proved fatal was confined to the muscles of the back; and the sum total of its immediate effect that described above.

The constitutional disturbances following these arrow-wounds, even when the injury is confined to bone or muscle, are liable to be out of all proportion to the apparent amount of damage done. There is almost always considerable febrile action, more or less complete anorexia and sleeplessness, and derangement of all the secretions. To these may be added great irritability and intolerance of a moderate degree of pain, much dejection of spirits, haggard and anxious countenance, etc. The tendency to despondence becomes frequently a prominent symptom to be combatted, and everything should be done to cheer the patient.

I would in conclusion offer a few simple rules for the treatment of this kind of injury:—

1. Explore the wound thoroughly, even should much division of muscular tissue be thereby necessitated.

2. Extract the last fragment that can by any means be laid hold of, and cleanse the wound thoroughly.

3. Dress very lightly and openly, facilitating by every means the ready discharge of pus; watching for burrowing and abscesses, and evacuating them as soon as detected.

Attend promptly and vigorously to constitutional symptoms, combatting them by the ordinary well-known means.—*Phila. Med. & Surg. Reporter.*

ON A CERTAIN FORM OF HÆMOPTYSIS, UNASSOCIATED WITH PULMONARY TUBERCULOSIS.

By RICHARD PAYNE COTTON, M.D., F.R.C.P. Lond. Physician to the Hospital for Consumption and Diseases of the Chest, Brompton.

Hæmorrhage from the lungs, to a greater or less degree, is so frequently found in connexion with a tubercular condition of the chest, that its diagnostic value, as a separate symptom, is

very apt to be overrated. In the early period of my attendance at the Brompton Hospital for Consumption, I saw so much hæmoptysis amongst the unmistakably phthisical out-patients, that I was sometimes tempted to the general conclusion that hæmoptysis was, practicably, but another name for phthisis. Subsequent and more extensive observation has, however, very much changed my views in this particular; and I am now fully convinced that hæmoptysis is met with in a very considerable number of non-tubercular cases. Simple pulmonary congestion, whether the result of inflammatory action, or arising from mechanical obstruction consequent upon heart-disease; pneumonia, whether acute or chronic; bronchitis; general plethora, —may at any time give rise to hæmorrhage from the lungs. I have seen, indeed, most active bleeding where some of these conditions have been combined—as in congestive bronchitis in persons of plethoric habit. To this list, congested states of the pharynx, tonsils, and gums might fairly be added; but I wish my present observations to apply to hæmoptysis, not in its literal sense, but as it is now usually employed—as hæmorrhage *from the lungs*. In a future communication I propose to enter upon the various forms which hæmoptysis, under these several conditions, is disposed to assume. In the present instance I am anxious only to draw attention to a not unfrequent, but, so far as I know, little recognized form of non-tubercular hæmoptysis, met with chiefly in the female sex, but sometimes also amongst males, generally in the early period of life.

It may simplify my description of this variety of hæmoptysis if I give a brief account of two or three cases in point.

A young lady, aged 18, recently arrived from a residence in one of the West India Islands, was supposed to be phthisical. I was requested to see her, and report upon the nature of her disease, about which several very conflicting opinions had already been given. She was anæmic, nervous, and out of health; had a dry cough, but had not become thinner; her catamenia were regular, but scanty; her appetite was capricious; and she had had frequent hæmoptysis, which there was every reason to believe did not proceed from either the mouth or fauces. The blood upon examination was found to be thin and watery, of a dark color, free from coagulum, unassociated with either bronchial or salivary secretion, and in general appearance much resembling a mixture of *red-currant jelly and water*. I was informed that this was its general character. Sometimes it had been considerable—as much as half a pint in twenty-four hours; at others, it would not exceed a teaspoonful

or two during the same period; sometimes it would be scarcely enough to tinge a pocket-handkerchief, and often it would disappear for days together. This state of things had existed for nearly two years, causing great anxiety to the patient and her friends, from a belief that it was indicative of pulmonary disease. Careful examination of the chest, however, failed to elicit any evidence that such was the case. Rest, change of air, and the tincture of sesquichloride of iron, entirely restored this patient to health. It is now more than three years since I was consulted, and I heard a short time back that the young lady was in perfect health.

A case very similar to this came under my notice two years ago, in consultation with Mr. Humpage, of Upper Seymour-street. A young lady aged 24, had long been delicate, and was supposed by her family to be consumptive. She had become thinner; had had a dry cough for some length of time; and had spat blood. Upon examination, this was found to present an appearance very similar to that described in the preceding case; it looked in fact, more like watery red-currant jelly than anything else. As in the other patient, there were no decided physical signs of tubercular disease; and we came to the conclusion that the patient was not phthisical. Time has justified our diagnosis; Mr. Humpage having lately informed me that the young lady had, for many months, lost the symptom which had caused so much alarm, and was in good health.

Another case, which I shall even more briefly relate, came under my notice about 18 months back. It was that of a young lady, 12 years of age, of slender and somewhat delicate appearance, but free from every symptom of tubercular affection. Mr. J. N. Winter, of Montpelier-road, Brighton, frequently saw this patient, and quite agreed with me as to the nature of her disease. She first alarmed her parents by spitting up, just after going to bed one night, a considerable quantity of blood. This was found upon examination to be watery and dark-colored—in fact, of the *thin red-currant jelly character* already described. This symptom has recurred at various intervals with more or less intensity, and the child still remains delicate, but without any indications of tubercular disease. At the time of her attacks her tonsils and pharynx are somewhat conjested, her gums spungy, and her fingers even have sometimes exuded a little watery blood, just as one sometimes sees in extreme cases of purpura. It is evident that, in this instance, the blood escapes not only from the mucous membrane of the respiratory passages, but also from that of the throat, tonsils, and gums.

Other cases of this form of hæmoptysis have fallen under my observation; but I shall not specially refer to them in consequence of not knowing their sequel. At least 12 or 13 have happened in my own wards at the Hospital for Consumption. Two only of these were males; the rest were females, generally of delicate and nervous appearance, and under the age of 30. Several had very suspicious symptoms of phthisis; but the physical signs failed to exhibit any evidence of pulmonary tuberculosis, and most of them improved in health under appropriate treatment. In every case the expectoration was of the same general character; sometimes it was mixed more or less with bronchial mucus, slightly tinged perhaps with blood, and sometimes with salivary secretion; but more frequently it was simply watery blood, resembling, as I have described, a mixture of red-currant jelly with water.

The following are the conclusions at which I have arrived from a consideration of the preceding notes:—

1st. There is a form of true hæmoptysis in which the expectoration is of a dark color, and of a more or less watery consistence, bearing a close resemblance to a mixture of red-currant jelly and water.

2d. That such hæmoptysis is of non-tubercular origin, and may proceed from any part of the gastro-pulmonary mucous membrane.

3d. That it is attributable to a morbid and fluid condition of the blood, allied, at least in appearance, to that which is met with in purpura and scurvy.—*London Lancet.*

NEW AND READY MODE OF PRODUCING ANÆSTHESIA.

Dr. B. W. Richardson has been for some years engaged in researches for the production of local anæsthesia. Snow maintained that all narcotics produced anæsthesia by the process of arresting oxidation. Dr. R. has come to the conclusion that arrest of oxidation means arrest of motion, and that anæsthesia means the temporary death of a part, *i.e.*, inertia in the molecules of the part. This led him to the conclusion that Dr. Arnott's plan of using extreme cold was the first true step in the progress of discovery, and that if it could be made easier of application, and at the same time could be combined with the use of a narcotic fluid an important advance in therapeutics

would neeessarily follow. Dr. R. has been for four years engaged in experimenting with a view of demonstrating this. Finally he has devised an apparatus consisting "simply of a graduated bottle for holding ether; through a perforated cork a double tube is inserted, one extremity of the inner part of which goes to the bottom of the bottle. Above the cork a little tube, connected with a hand bellows, pierees the outer part of the double tube, and eommunicates by means of the outer part, by a small aperture, with the interior of the bottle. The inner tube for delivering the ether runs upwards nearly to the extremity of the outer tube. Now, when the bellows are worked, a double current of air is produced, one current descending and pressing upon the ether forcing it along the inner tube, and the other ascending through the outer tube and playing upon the column of ether as it eseapes through the fine jet. By having a series of jets to fit on the lower part of the inner tube, the volume of ether can be moderated at pleasure; and by having a double tube for the admission of air, and two pairs of hand bellows, the volume of ether and of air can be equally increased with pleasure, and with the produetion of a degree of eold six below zero.

"By this simple apparatus, at any temperature of the day and at any season, the surgeon has thus in his hands a means for producing cold even six degrees below zero; and by direeting the spray upon a half-inch test-tube containing water he ean produee a eolumn of iee in two minutes at most. Further, by this modifieation of Siegle's apparatus he can distribute fluids in the form of spray into any of the eavities of the body—into the bladder, for instance, by means of a spray eathcter, or into the uterus by an uterine spray eatheter.

"When the ether spray thus produced is directed upon the outer skin, the skin is rendered insensible within a minute; but the effeets do not end here. So soon as the skin is divided the ether begins to exert on the nervous filaments the double action of cold and etherization; so that the narcotism ean be extended deeply to any desired extent. Pure rectified ether used in this manner is entirely negative; it causes no irritation, and may be applied to a deep wound, as I shall show, without any danger. I have applied it to the mucous membrane of my own eye, after first chilling the ball with the lid closed.

"I have now employed this mode of producing local anæsthesia in four cases on the human subjeet. The first ease was the extraetion of a tooth from a lady, the operation being performed by my friend and neighbor Dr. Sedgwick, on January 24th of

this year. On the 29th of the same month, I used it again on the same lady for the extraction of three very difficult teeth, Dr. Sedgwick again operating. The results were as satisfactory as in the previous case, where the ice and salt ether apparatus was used.

"I have used the apparatus also in connection with my friend Mr. Adams, who had a case at the Great Northern Hospital of deep dissecting abscess in the thigh of a young woman. In the abscess there was a small opening, which just admitted the director. I first narcotized around this opening, and the director being introduced, Mr. Adams carried his bistoury nearly an inch deep and one inch in the line of the director. I then narcotized the deep-seated parts, and enabled him to cut for another inch and a-half in the same direction. The director was then placed in the upper line of the abscess, the process was repeated, and the incision was carried two and a-half inches in that direction. The patient was entirely unconscious of pain, and after narcotising the whole of the deep surface, Mr. Adams inserted his fingers and cleared out the wound without creating the slightest evidence of pain.

"Afterwards, in the case of a lacerated wound, six inches long, in the arm of a boy, who had been injured with machinery, I narcotized while six sutures were introduced by Mr. Adams. The first needle was carried through without the anæsthetic, and caused expression of acute pain; the remaining eleven needles, after a few seconds' administration of the ether spray, were passed through painlessly. The twisting of the wire sutures gave no pain.

"These results are so interesting that I make no apology for bringing them at once before my medical brethren. I wish it to be distinctly understood that at the present moment I only introduce the method here described for the production of superficial local anæsthesia. It is, I believe, applicable to a large number of minor operations, for which the more dangerous agent chloroform is now commonly employed—I mean such operations as tooth extraction, tying nævus, tying piles, incising carbuncles, opening abscesses, putting in sutures, removing small tumors, removing the toe-nail, dividing tendons, operating for fistula, removing cancer of the lip, and other similar minor operations which I need not mention. The process may also be applied to reduce local inflammation.

"In course of time, and guided by experience and the advancement of science, we may, however, expect more. If an anæsthetic fluid of negative qualities, as regards irritation of

nerve, and which has a boiling point of 75° or 80° can be obtained from the hydrocarbon series, the deepest anæsthesia may be produced, and even a limb may be amputated by this method. It may also turn out that certain anæsthetics may be added to the ethereal solution with advantage, such as small quanties of chloroform, or some of the narcotic alkaloids, if they could be made soluble in ether. A solution of morphia and atropia combined, if they could be diffused through ether, which at present seems impossible, could thus be brought into action so as to cause deep insensibility. In operating on the extremities it would be good practice to stop the current of warm blood by making pressure above on the main artery.

"Reaction from the anæsthesia is in no degree painful, and hemorrhage is almost entirely controlled during the anæsthesia.

"One or two precautions are necessary. It is essential, in the first place, to use pure rectified ether; methylated ether causes irritation, and chloroform, unless largely diluted with ether—say one part in eight—does the same."—*Med. Times and Gazette*, Feb. 3, 1866.

CAUSES OF INTERMITTENT AND REMITTENT FEVER.

Prof. J. H. Salisbury communicates to the *American Journal of Medical Sciences* an elaborate article, giving an account of numerous observations and investigations regarding the origin and cause of intermittent fever. Dr. Salisbury found on microscopic examination of the salivary secretion and expectoration of those laboring under intermittent fever, and who resided upon ague levels, and were exposed to the evening, night, and morning exhalations and vapors arising from stagnant pools, swamps, and humid low grounds, that there occurred in these secretions a great variety of zoosporoid cells, animalcular bodies, diatoms, dismidiæ, algoid cells and filaments, and fungoid spores. Constantly and uniformly found in all cases, and usually in great abundance, were minute oblong cells, either single or aggregated, consisting of a distinct nucleus, surrounded by a smooth cell-wall, with a highly clear, apparently empty space between the outside cell-wall and the nucleus. They were fungoid, but cells of an algoid type, resembling strongly those of the *palmellæ*. In persons residing *above* the summit plane of ague, the bodies were invariably absent.

By a series of carefully conducted experiments and observations, the following facts were ascertained:—

1. That cryptogamic spores, and other minute bodies, are mainly elevated above the surface during the night. That they rise and are suspended in the cold damp exhalations from the soil, after the sun has set, and fall again to the earth soon after it rises.

2. That in the latitude of Ohio, these bodies seldom rise above from thirty-five to sixty feet above the low levels. In the northern and central portions of the State they rise from thirty-five to forty-five feet, while in the southern, from forty to sixty feet.

3. That at Nashville and Memphis they rise from sixty to one hundred feet and more above the surface.

4. That above the summit plane of the cool night exhalations, these bodies do not rise, and intermittents do not extend.

5. That the day air of malarial districts is quite free from these palmelloid spores, and from causes that produce intermittents.

Palmellæ belong to the lowest known vegetable organisms. The several forms of this type which are constantly attendant on intermittent malarial districts, have received the generic name *gemiasma* (earth miasma), of which Dr. Salisbury enumerates six species.

In another series of extended observations, the local effects produced in the mouth and air-passages by inhaling these cells, are minutely described. They cause a dry, feverish, constructed feeling in the mouth, fauces, and throat, increasing until the fauces become parched and feverish, normal mucous discharges become checked, and the feeling soon extends to the bronchial and pulmonary surfaces, which also become dry, feverish, and constricted, with a heavy congested sensation and dull pain. These peculiar symptoms generally last several hours after leaving the bog.

The author has made experiments relative to the production of intermittent fever in localities entirely free from malarial influence, by carrying boxes filled with surface earth from a malarious drying prairie bog, covered with the *palmellæ*, to these localities, and exposing persons to their emanations. Attacks of intermittent were the result.

The investigations of Dr. Salisbury must be considered highly important, as they establish positively the *fons et origo* of malarious fever.

Dr. E. Holdon, of Newark, N.J., late of the U.S.N., communicates a paper to the same journal, entitled, "An Inquiry into the Causes of certain Diseases on Ships of War," in which

he expresses his opinion that fever of an intermittant type is produced by the growth of mould on board of ship, under the action of hydro-sulphuric acid of the bilge.—*Med. and Surg. Reporter.*

PROCESS OF DISINFECTION.

A memorandum on disinfection has been issued by the Privy Council, (Great Britain). In view of the approaching epidemics, we give its main points, after the *Chemical News and Druggists' Circular:*—

"1. For artificial disinfection, the agents most useful are—chloride of lime, quicklime, and Condy's manganic compounds. Metalic salts—perchloride of iron, sulphate of iron, and chloride of zinc, are applicable. In certain cases chlorine gas or sulphurous acid gas may be used; and in other cases powdered charcoal or fresh earth.

"2. If perchloride of iron or chloride of zinc be used, the common concentrated solution may be diluted with eight or ten times its bulk of water. Sulphate of iron or chloride of iron may be used in the proportion of a pound to a gallon of water, taking care that the water completely dissolves the sulphate of iron, or has the chloride of lime thoroughly mixed with it. Condy's stronger fluid (red) may be diluted with fifty times its bulk of water; his weaker fluid (green) with thirty times its bulk of water. When the matters requiring to be disinfected are matters having an offensive smell, the disinfectant should be used till this smell has entirely ceased.

"3. In the ordinary emptying of privies or cesspools, use may be made of perchloride of iron, or chloride of zinc, or of sulphate of iron. But where disease is present, it is best to use chloride of lime or Condy's fluid. Where it is desirable to disinfect, before throwing away the evacuations from the bowels of persons suffering from certain diseases, the disinfectant should be put into the night-stool or bed-pan when about to be used by the patient.

"4. Heaps of manure, or of other filth, if it be impossible or inexpedient to remove them, should be covered to the depth of two or three inches with a layer of freshly burnt vegetable charcoal in powder. Freshly burnt lime may be used in the same way, but is less effective than charcoal. If neither charcoal nor lime be at hand, the filth should be covered with a layer of some inches thick of clean dry earth.

"5. Earth near dwellings, if it has become offensive or foul by the soakage of decaying animal or vegetable matter, should be treated on the same plan.

"6. Drains and ditches are best treated with chloride of lime, or Condy's fluid, or with perchoride of iron. A pound of good chloride of lime will generally well suffice to disinfect 1000 gallons of running sewerage; but, of course, the quantity of disinfectant required will depend upon the amount of filth in the fluid to be disinfected.

"7. Linen and washing apparel requiring to be disinfected should without delay be set to soak in water containing per gallon about an ounce either of chloride of lime or Condy's red fluid. The latter, as not being corrosive, is preferable. Or the articles in question may be plunged at once into boiling water, and afterward, when at wash, be actually boiled in the washing water.

"8. Woollens, bedding, or clothing which cannot be washed, may be disinfected by exposure for two or more hours in chambers constructed for the purpose to a temperature of 210 to 250 degrees Fahrenheit.

"9. For the disinfection of interiors of houses, the ceilings and walls should be washed with quicklime water. The woodwork should be cleansed with soap and water, and subsequently washed with a solution of chloride of lime, about two ounces to the gallon.

"10. A room, no longer occupied, may be disinfected by sulphurous acid gas or chlorine gas—the first by burning in the room an ounce or two of flowers of sulphur in a pipkin; the second by setting in the room a dish containing a-quarter of a pound of finely-powdered black oxyd of manganese, over which is poured half a pint of muriatic acid, previously mixed with a-quarter of a pint of water. In either case, the doors, chimney, and windows of the room must be kept carefully closed during the process, which lasts for several hours."

The Profession in Paris.—There are in the French capital 1848 doctors of medicine 375 medical men of the second grade, and 740 midwives. Among these, 340 are members of the Legion of Honor, 94 are officers of the same legion, 26 commanders, 1 grand officer, and 1 grand cross. There is about one medical man for 800 inhabitants, reckoning the population at 1,800,000, and taking the whole of the department of the Seine, which includes 2223 professional men.—*London Lancet.*

Editorial.

AMERICAN MEDICAL ASSOCIATION.

ANNUAL MEETING, AT BALTIMORE, MD., MAY 1ST, 1866

This Association met in Concordia Hall, on Eutaw Street, Baltimore, and was called to order by the President, D. Humphrey Storer, of Boston, at 11 A.M., of May 1st, 1866. The number in attendance was large, and embraced delegates and members from all parts of the country. An appropriate prayer was made by Rev. Dr. SPEER, of Baltimore; after which, Dr. C. C. Cox, Chairman of the Committee of Arrangements, in an eloquent address, tendered the members of the Association a cordial reception, both by the profession and the citizens of Baltimore. The Committee also reported the names of such delegates and members as had been registered up to that time.

The election of members by invitation being in order, Dr. Jas. E. Rives, of Fairmount, West Virginia, was elected, and the rule suspended to enable Dr. C. C. Cox, of Baltimore, to make a statement in relation to the expulsion of Dr. M. A Pallen, during the annual meeting in Boston the preceding year. Dr. Cox stated that, since the last meeting, Dr. Pallen had placed in his hands such evidence and documents as were entirely satisfactory to his own mind, that the statements on which Dr. Pallen was expelled were without foundation; and, as he had moved the expulsion of Dr. Pallen last year, he was desirous of embracing the first opportunity to restore him to his former position. He therefore moved that the papers and documents in his possession be referred to the Committee on Ethics, with instructions to report as early as practicable. After a little discussion the motion was adopted, and the committee made to consist of Drs. Hooker, of Connecticut, Brinsmade, of New York, and Davis, of Illinois. At a subsequent part of the same morning session, the committee made the following report, which was unanimously adopted:—

"The committee, to whom were referred the papers in rela-

tion to the expulsion of Dr. Montrose A. Pallen, at the meeting of the Association in Boston, respectfully report that they have examined the documents and evidence referred to them, embracing papers endorsed by Lieut.-Gen. U. S. Grant, the Vice-Consul of the United States at Montreal, and many citizens of Missouri, and are fully satisfied that the statements on which his expulsion was based were entirely unfounded, and, therefore, regretting the injustice done, both to Dr. Pallen and the Association, we recommend the adoption of the following resolution:—

"*Resolved*, That the preamble and resolution adopted by the Association at the Annual Meeting in Boston, June, 1865, expelling Dr. Montrose A. Pallen, be hereby rescinded, and that he be restored to his previous membership in the Association."

Dr. Pallen, who was present as a delegate from the St. Louis Medical Society, was then introduced and received the cordial greeting of the Association.

Dr. D. H. Storer, of Boston, the President of the Association, read his annual address, which was listened to with marked attention. It related chiefly to a subject that has elicited much discussion, both in this country and Europe, *viz.*, how far specialties and specialists should be encouraged and recognized in our profession. The thanks of the Association were tendered to Dr. Storer for his address, and a copy requested for publication in the Transactions.

The whole list of special committees was then called, and such reports as were ready, together with such volunteer communications as were presented, were referred to the appropriate Sections for consideration.

On motion, Dr. E. Brown-Séquard was invited to address the Association, on the Treatment of Nervous Disorders, at 11 o'clock A.M. on Wednesday.

Dr. Jewell announced that Dr. Marsden, of Quebec, Canada, was present, and, on motion, he was elected a member by invitation, and requested to take a seat on the platform.

The Association then adjourned until 9 o'clock A.M. of Wednesday, the afternoon being occupied by the Sections in

hearing and discussing such subjects as had been referred to them.

WEDNESDAY, MAY 2D—SECOND DAY.

The Association was called to order at 9½ o'clock A.M., the President, D. H. Storer, of Boston, in the Chair.

After some business notices by Dr. Cox, Chairman of the Committee of Arrangements, Drs. J. A. Reed, W. Whitridge, L. M. Eastman, of Baltimore, and Dr. Peter Parker, of China, were elected as members by invitation.

The reports of the Committee on Publication and of the Treasurer were read, accepted, and ordered on file. These reports showed that the publication of the last volume of Transactions had left the treasury in debt to the publishers to the amount of $404.52. This was owing, in part, to the expensive character of many of the illustrations, especially those accompanying the prize essay.

The Association then took a recess of fifteen minutes, to enable the delegates from each State to select one of their own number, to constitute a committee whose duty it should be to nominate officers for the ensuing year.

After the recess, the regular order of business being the reports of standing committees, the Committee on Medical Education was called, when Dr. S. D. Gross, of Philadelphia, Ch'n. of the Committee, stated that no report had been prepared, partly, at least, from the fact that the members of the Committee resided so far apart that no conference could be had on the subject referred to them.

Dr. Charles A. Lee, of New York, Chairman of the Committee on Medical Literature, proceeded with the reading of his report, but before completing it the hour of 11 o'clock A.M. arrived, which had been fixed for hearing an address from Dr. E. Brown-Séquard. The further reading was suspended, and the report referred to the Committee on Publication. The report of Dr. Lee was lengthy, and contained some topics and observations of doubtful propriety. It should have received a more careful consideration before its reference for publication.

Dr. Brown-Séquard took the platform and entertained the

Association for one and a-half hours, in a most interesting and profitable discussion of the subject of Nervous Affections and their Treatment.

On motion, the thanks of the Association were tendered to Dr. Brown-Séquard, and a copy of his lecture requested for publication.

The hearing of reports from standing committees was resumed, and Dr. E. Elliott presented the report of the Committee on Prize Essays, by which it appeared that four essays had been presented to the committee. The committee recommended two of these for prizes, *viz.*:—one, "On Health in Country and City," by W. F. Tounes, M.D., of New York; and one "On Digitaline, its Properties chemically and therapeutically considered," by S. R. Percy, M.D., of New York. The report of the committee was accepted and referred to the Committee of Publication.

Dr. W. Hooker, of Conn., Chairman of the Committee on Ethics, presented a report on the subject of Specialties, which was referred to the committee at the previous annual meeting. After hearing the report, its consideration was made the special order for 9½ o'clock A.M., on Thursday, and immediately after its disposition Dr. Marsden, of Canada, was invited to address the Association on the subject of Cholera and Quarantine.

The presentation of resolutions being in order, Dr. W. Hooker offered a resolution, declaring that no paper should be received by the Association, unless completed so as to be ready for direct transmission to the Publication Committee, without retention or revision by the author; which was adopted.

Dr. J. F. Hibbard, of Ind., presented a preamble and resolution, approving of the action of a convention of delegates from Western Colleges, recently held in Cincinnati, proposing a longer annual lecture term and a more uniform rate of fees, the consideration of which was made the special order for 11 o'clock A.M. of Thursday.

Resolutions of respect and condolence were offered in regard to the late Dr. James Couper, of Delaware, Dr. Jos. M. Smith, of New York, and Dr. D. L. McGugin, of Iowa, recently deceased, which were unanimously adopted.

On motion of Dr. M. K. Taylor, of Iowa, a committee of one from each State represented was appointed to prepare a memorial to Congress, asking for an appropriation sufficient for the early publication of the medical and surgical history of the war for subduing the recent rebellion, as prepared under the direction of the Surgeon-General of the U.S.A.

The Association then adjourned, to 9 o'clock A.M., of Thursday; the afternoon being devoted to scientific investigations in Sections.

THURSDAY, MAY 3D—THIRD DAY.

The President, Dr. D. H. Storer, called the Association to order at 9 o'clock A.M.

After some miscellaneous business, the special order for 9½ o'clock was taken up. A majority and minority report on the subject of *Specialties* were read and discussed at considerable length; when, on motion, the whole subject was postponed until the next annual meeting.

Dr. Marsden, of Canada, then occupied the attention of the Association for one and a-half hours, in giving a detailed description of his plan of quarantine, designed to prevent the introduction of cholera into the country. The views of Dr. Marsden are founded on the supposition that cholera is contagious, and can be prevented wholly by rigid quarantine and isolation. The subject was made the special order for consideration at 5 o'clock P.M.

Dr. N. S. Davis, Chairman of the Committee on Nominations, asked and obtained leave to report, as follows:—For President of the Association, H. F. Askew, of Delaware; For Vice-Presidents, Wm. K. Boling, of Tenn., J. C. Hughes, of Iowa, H. I. Bowditch, of Mass., and T. C. Brinsmade, of New York; Permanent-Secretary, W. B. Atkinson, of Penn.; Assistant-Secretary, W. W. Dawson, of Ohio; Treasurer, Caspar Wistar, of Penn.; For Committee of Arrangements, J. A. Murphy, James Graham, R. R. McIlvaine, J. P. Walker, W. T. Brown, and W. B. Davis, all of Cincinnati, O.; Committee on Publication, the same as at present; Committee on Education, S. D. Gross, D. F. Condie, John Bell, of Philadelphia, H. J. Bigelow, of

Boston, and Chas. A. Pope, of St. Louis; Committee on Medical Literature, A. C. Post, James Anderson, A. D. Noyes, T. G. Thomas, and Stephen Smith, all of New York; Committee on Prize Essays, F. Donaldson, Jos. Simpson, C. C. Cox, E. Warren, and W. C. Van Bibber, all of Baltimore. The Committees on Climatology and Epidemics, and on American Medical Necrology, were recommended to be continued, with only a few changes and additions.

The next annual meeting was recommended to be held in Cincinnati, on the first Tuesday in May, 1867.

On motion, the report of the Nominating Committee was accepted and adopted by a unanimous vote.

The Association then went into Committee of the Whole, for considering the preamble and resolution concerning the action of Western Medical Colleges on the subject of extending the lecture terms and fees; Dr. J. F. Hibbard, of Indiana, in the Chair. A very interesting discussion ensued, which was participated in by Drs. Wright, of Cincinnati, Storer, of Boston, Hooker, of New Haven, Davis, of Chicago, and Allen and Anticell, of Washington. Dr. Davis offered the following, as a substitute for the preamble and resolution under discussion:—

Resolved, That this Association earnestly request the Medical Colleges of the country to hold a convention for the purpose of thoroughly revising the present system of medical college instruction, and that a committee be appointed to aid in carrying the resolution into effect.

The substitute was adopted, and the Committee of the Whole rose and reported.

On motion, the action of the Committee of the Whole was concurred in by the Association, and the President appointed Drs. N. S. Davis, of Chicago, W. Hooker, of New Haven, S. D. Gross, of Philadelphia, M. B. Wright, of Cincinnati, G. C. Shattuck, of Boston, the committee called for by the resolution of Dr. Davis.

After some miscellaneous business, the Association adjourned to 5 o'clock P.M.

Afternoon Session.

At 5 o'clock P.M., the members of the Association re-assembled, and were called to order by the President.

On motion, the Association went into Committee of the Whole, on the subject of Dr. Marsden's plan of quarantine, Dr. N. S. Davis being called to the Chair.

Dr. L. A. Sayre, of New York, commenced the discussion, strongly advocating the doctrine of contagion, and the system of quarantine recommended by Dr. Marsden. Drs. M. L. Linton, of St. Louis, and J. N. Bell, of Brooklyn, followed upon the opposite side. Drs. John L. Atlee, of Lancaster, Chas. A. Lee, of New York, and Marsden, of Quebec, supported the doctrine of contagion and quarantine; while Dr. Wilson Jewell, of Philadelphia, sustained the opposite side with ability. Dr. King, of Pennsylvania, offered a resolution, endorsing the plan of quarantine, and urging its adoption on Congress. But without coming to any conclusion, the committee rose and reported progress.

The Association then adjourned to 9 o'clock A.M. of Friday.

FRIDAY MORNING—FOURTH DAY.

The Association was called to order at 9 o'clock, Dr. D. H. Storer, President, in the Chair.

The proceedings of the preceding sessions of the Association were read by the Permanent-Secretary and approved.

Some miscellaneous business was transacted, amongst which was the adoption of resolutions of thanks to the President, to the Committee of Arrangements and Profession of Baltimore, and to the Governor of the State and Civic Authorities of the City, for the very hospitable manner in which the Association had been received and entertained during the present annual meeting.

The Secretaries of the several Sections reported in order the doings of each Section; and their reports were severally accepted and referred to the Committee on Publication.

The Association then went into Committee of the Whole, for the further consideration of the resolution of Dr. King, com-

mending the plan of quarantine proposed by Dr. Marsden, and Dr. N. S. Davis was called to the Chair.

Dr. Birge offered a resolution, as a substitute for the one offered by Dr. King, declaring the necessity of efficient measures for preventing the spread of cholera, and asking Congress to take such measures as would test the value of the plan of quarantine proposed by Dr. Marsden. An interesting discussion followed, which was participated in by Drs. Bell, of Brooklyn; Sayre, of New York; Hooker, of New Haven; D. H. Storer of Boston; A. C. Post, of New York; N. Pinckney, of U.S. N., Marsden, of Quebec; and Anderson, of New York.

On motion, the resolution and substitute were laid upon the table. The Committee of the Whole then rose and reported the action taken, which was concurred in by a vote of the Association.

After some items of miscellaneous business, the Association adjourned to meet in Cincinnati, on the first Tuesday in May, 1867.

Thus ended the doings of the Nineteenth Annual Meeting of the Association, so far as the general sessions were concerned, but the principal work of scientific interest and importance was transacted in the several Sections. We were not able to preserve a list of all the papers and reports that were read in the Sections and referred to the Committee of Publication, but they were sufficient to make a good-sized volume, and some of them were papers of decided merit. Among them, was a report on diphtheria, by Dr. Holton, of Vermont; one on spotted fever, or cerebro-spinal meningitis, by Dr. Levick, of Pennsylvania; one on the etiological and pathological relations of epidemic erysipelas, spotted fever, and diphtheria, by Dr. Davis, of Illinois; and one on alcohol and its relations to man, by Dr. J. R. W. Dunbar, of Maryland.

The social interests of the Association were well provided for. The first evening was occupied by an exceedingly pleasant promenade concert in Concordia Hall. The Hall itself was elegant, the music excellent, and the free social greeting and intercourse all that could be desired.

The second evening was occupied by cordial and elegant receptions at the residences of Drs. C. C. Cox, J. Simpson, and T. E. Bond. On the third evening, the Mayor and Council of the City of Baltimore gave the Association a very bounteous and hospitable entertainment, which was accompanied, as usual, by toasts and speeches, until a late hour. The occasion was highly enjoyed by all, and was quite free from those excesses which sometimes mar such public festivities. On the afternoon of the fourth and last day, the members of the Association, with their ladies, were provided with an excursion to Annapolis and a reception by the Governor of Maryland. This was, in all respects, one of the most pleasant seasons that the members of the Association have ever enjoyed. The day was fine; the boat in excellent order, with a splendid band of music from Fort McHenry; the company enlivened by the presence of many ladies of the highest social qualities; and the reception by Gov. Swan, with the interchange of sentiments between him and Dr. Cox, as the representative of the Association, all contributed to make the occasion one long to be remembered with great pleasure. Altogether, the influence exerted by this annual meeting of the Association, at this crisis in the history of our country, cannot fail to be of a permanently beneficial character.

A more extended notice of the work done in the several Sections, must be reserved until our next issue.

New Books.—We have space only to acknowledge the reception of the following new works:—

Recent Advances in Ophthalmic Science. By H. W. Williams, of Boston. Ticknor & Fields Publishers. 1866.

For sale by J. R. Walsh.

Asiatic Cholera. By F. A. Burrall, M.D. Published by Wm. Wood & Co., 61 Walker St., New York. 1866.

For sale by Keen & Co., 148 Lake St., Chicago.

Transactions of the American Medical Association, Volume 16, for 1865.

A large-sized, neatly-published volume, the contents of which shall be noticed more fully hereafter.

THE AURORA HOMEOPATHIC QUACKS TREATED TO AN "ALLOPATHIC DOSE OF FACTS."

By D. W. YOUNG, M.D., of Aurora, Ill.

The following spicy correspondence is taken from the Aurora *Beacon*:—

At a recent meeting of the Aurora City Medical Association, Dr. Young said he had now under treatment one of the worst cases of mercurial sore mouth that he had seen in ten years. The patient had been treated for eight weeks by one of the Aurora homeopathic doctors for a simple ailment, and had come out of the conflict minus $80.00 in cash, and with a magnificent *calomel sore mouth.* "He presumed, of course, the remedy had been given under the sanction of homeopathic law." In this case they are estopped from resorting to the usual homeopathic dodge of charging it to the account of previous medication, for the reason that the patient is a young person that had never been subject to medical treatment before, and therefore it is unquestionably a case of original homeopathic "mercurius." He thought it undeniable evidence of "Medical Progress." He said if he should find as bad a case of mercurial salivation, resulting from medical treatment, in the hands of a regular physician for such a disease, he should certainly recommend a prosecution for mal-practice.

To which the Homeopaths replied as follows:—

NOTICE.

Editor Beacon:—We, the undersigned, believing that in the report of the A. C. M. Association, published in your issue of last week, Dr. Young attempted to vilify and slander Homeopathy, and believing his assertions to be *false in every particular*, challenge him to publish the name of the physician and patient, for the benefit of the public and in vindication of his own honor. (Signed,) A. R. Bartlett, M.D.,
F. H. VanLiew, M.D.,
A. W. Woodward, M.D.,
W. M. L. Fisk, M.D.

To which request Dr. Young replied promptly as follows:—
To A. R. Bartlett, M.D., F. H. VanLiew, M.D., A. W. Wood-

ward, M.D., and W. M. L. Fisk, M.D., Homocopathic Quacks of Aurora.

Gentlemen:—Your communication published in the Aurora *Beacon*, April 12th, commenting upon my report to the Aurora City Medical Association of the case of "Magnificent Homeopathic calomel sore mouth," is before me. In reply allow me to say that it affords me unbounded pleasure to comply with your petition or challenge so far as to publish for "the public benefit," the name of the homeopathic physician who treated the patient (his name is Fred. H. VanLiew) and regret exceedingly that professional honor precludes me from publishing the name of the patient. But in lieu thereof I will publish the following certificates substantiating my statement:—

This may certify that I went with Mr. —, a friend and messmate of mine, who was suffering severely with a sore mouth, to Dr. D. W. Young's office, and while there heard him tell Dr. Young that he had been treated by Dr. Fred. H. VanLiew for eight or nine weeks; that while he was taking VanLiew's medicine his mouth and gums became very sore, teeth loose, breath fetid, and had a peculiar metallic taste in his mouth. When he spoke to VanLiew concerning his sore mouth, he told him *it was scrofula coming out.* I know he druled constantly, and was compelled to spit nearly all the time.

G. M. Caskey, Painter at Car Shops.

April 13, 1866.

I hereby certify that I was present in Doctor Young's office and heard the above conversation. I saw the man's mouth, and know that he druled badly and spit almost constantly. I have no doubt but it was a pure case of calomel sore mouth.

John Green, Medical Student with Dr. Young.

I do confess, gentlemen, that I am surprised at your pretended ignorance in attempting to deny that such cases do occur in your practice, *when you know them to be of quite frequent occurrence.* Every physician who has practiced medicine in Aurora any length of time, and met your patients, knows this to be the case. I did not report this case because of their rare occurrence, but because of its severity. At the last meeting

of the Fox River Valley Medical Association, Dr. Hard reported a similar case that occurred under the treatment of one of your number. Please challenge him, and I have no doubt he will publish the name of the physician for the "public benefit." As further proof that you do use calomel, I publish the following testimony of Dr. Taylor, the celebrated English chemist, before the select committee of Parliament. He said: "I detected, in six powders, that three contained sugar of milk, and three contained morphine and *calomel.* The powders were numbered to be taken on certain nights, and in every other powder there was sugar of milk, and in every other powder morphine and *calomel.*"

I am, gentlemen, with great respect, your obedient servant,

D. W. YOUNG, M.D.

PHILADELPHIA, *Jan. 20, 1866.*

DEAR SIR:—Your attention is invited to the following letter and prospectus. Should the enterprise named therein commend itself to your support, we shall be happy to forward your name as a subscriber. Very respectfully,

Your obedient servants,

J. B. LIPPINCOTT & Co.

ROYAL LIBRARY, WINDSOR CASTLE,
21st December, 1865.

MY DEAR SIR:—I send you a prospectus of a work of great interest and importance, which I believe may attract as much attention in America as it can on this side of the Atlantic: for the name of Leonardo da Vinci belongs to the world; and this record of his profound studies in science, and his consummate skill in art, concerns all who care to know how human civilization has reached its present elevated point.

The MS. which I am about to publish has belonged to the Royal Collections ever since the time of Charles II. But, by a most remarkable accident, it was laid aside and totally forgotten for full 90 years after it had been purchased. Since 1763, when it was discovered in an old bureau at Kensington Palace, it has been seen by a few persons only; because it formed a part of the private collections of the Crown. But all who were able to appreciate it joined in the opinion I have quoted in my prospectus from the writings of the celebrated Dr. Wm. Hunter.

This great surgeon proposed to publish some portions of the MS. in *fac-simile*, but was prevented by death. At a later time, Mr. Chamberlaine, one of my predecessors in the care of the Royal Collection of Prints and Drawings, entertained the same design, and did engrave six plates, when he was stopped by the prodigious expense of the undertaking. The discovery of the process of photolithography renders it now comparatively easy to reproduce an exact copy of each line and touch of the great artist. And when it is considered that this MS. records the first discovery of the circulation of the blood, and fills up a great blank in the history of anatomical science, while the drawings are perfect models for the student of art, I cannot but think my enterprise will be warmly supported.

Her Majesty the Queen has headed the subscription list with an order for ten copies, and their Royal Highnesses the Prince of Wales (to whom the work will be dedicated), the Prince of Prussia, Prince Alfred, and Prince Louis of Hesse, have also given me their names; I have also, almost before I have announced my plan, received the subscriptions of the British Museum Print Room, the Department of Science and Art, and of several both of the nobility and gentry, and scientific and artistic men, who desire my series.

I need not say that I shall welcome most warmly any support you can procure me in the United States; and so

I remain, my dear Sir,

Yours most truly,

J. B. Lippincott, Esq. B. B. WOODWARD.

PRIVATE PROSPECTUS.

The Anatomical Drawings and Writings of Leonardo da Vinci are among the choicest treasures in the Royal Library at Windsor Castle. They are contained in about two hundred detached leaves of note-books, and appear to be the records of studies commenced as his needful training in art, and would, perhaps, have been employed in the great Treatise on Painting which he afterward projected. But he carried his researches far beyond what was required for these purposes, and arrived at results which entitle him to a place in the foremost rank of discoverers in this branch of science. Vasari, after describing (with a little pardonable inaccuracy) these works, reports the opinion entertained of them in his day. "It appears," he says, "almost incredible that this sublime genius could at the same time discourse, as he has done, of art, and of the muscles, nerves, veins, and any part of the frame, all treated with equal

diligenee and sueeess." And Dr. Wm. Hunter, who saw them in the last century, in the Royal Collection, thus expressed his appreeiation of them:—"When I eonsider what pains he has taken upon every part of the body, the superiority of his universal genius, his particular exeellence in mechanies and hydraulics, and the attention with whieh such a man would examine and see objeets whieh he was to draw, I am fully persuaded that Leonardo was the best anatomist, at that time, in the world."

These drawings and writings it is now proposed to publish in *fac-simile*, on aeeount of their eombined artistic and scientifie value. And Her Majesty the Queen has been graeiously pleased to permit their publieation in the interests of these studies.

The whole work will eonsist of about two hundred and fifty plates, in folio, with the text of the MS. printed in full, an English and a Freneh translation, and all needful notes and elueidations.

Mr. Panizzi, Principal Librarian of the British Museum, has undertaken to superintend the text, and Dr. Sharpey, See. R. S., Prof. of Anatomy and Physiology in University College, London, will assist in the preparation of the seientifie eommentary.

It will be issued in twenty parts, at the priee of one guinea each, and the publieation will eommenee early in the year 1866.

B. B. WOODWARD.

ROYAL LIBRARY, WINDSOR CASTLE,
2d Oct., 1865

Subseriptions reeeived by J. B. LIPPINCOTT & CO.,
715 & 717 Market St., Philadelphia.

THE RINDERPEST.—Most of our daily papers are filled with aeeounts of the progress of the eattle plague in England and Europe. Amongst the most reeent dispatches of this seourge are from our Consul at Liverpool up to the date of January 20 ult. Thus far he reports that 70,000 eattle have either died of this plague, or been killed after taking it. It is probable that additionally hundreds of cases are not reported at all, so that these figures by no means represent the full and aetual loss. Vaccination is being tried as a preventive. Inasmueh as these scourges amongst the lower animals have eome in some way to be regarded as forerunners of Asiatie Cholera, an item of plague amongst animals in this country will be read with

interest. We are informed by a very intelligent physician from Grant County, Kentucky, that in his county large numbers of hogs are dying off from an epidemic, materially different from the disease familiary known in this country as "Hog Cholera." The animals sicken, become languid, helpless, refuse food, and linger a number of days before death. There is no diarrhœa, but frequently toward the termination of the case there is set up a dysentric discharge from the bowels. The general progress of the case resembling the typhoid fever of the human animal, and a *post mortem* examination revealing similar intestinal lesions.—*Cincinnati Lancet & Observer.*

Mortality for the Month of March.—The mortality report for the month of March, as copied from the books of the health-officer, is given below. The report is very gratifying when compared with the reports of the same month for the years 1864 and 1865. Last year in the month of March 279 deaths were reported. In March, 1864, the number was greater by 90 than now. Not one case of small-pox is reported, and the city is evidently entirely free from all kinds of epidemic disorders:—

CAUSES OF DEATH.

Accidents,	3	Intermittent Fever,	1
Apoplexy,	2	Inflammation of Brain,	3
Asthma,	1	Inflammation of Bowels,	5
Bronchitis,	1	Inflammation of Lungs,	9
Brain Fever,	5	Inflammation of Liver,	1
Congestion of Brain,	5	Jaundice,	3
Congestion of Bowels,	1	Killed,	1
Congestion of Lungs,	5	Lung Fever,	7
Colds,	2	Liver Complaint,	1
Cancer,	2	Marasmus,	1
Consumption,	31	Measles,	2
Cramps,	14	Old Age,	5
Croup,	12	Pneumonia,	4
Convulsions,	3	Paralysis,	4
Childbirth,	9	Puerperal Fever,	2
Cerebro-Spinal Meningitis,	4	Suicide,	3
Cholera-Morbus,	1	Stillborn,	9
Cholera Infantum,	2	Scarlet Fever,	12
Decline,	2	Ship Fever,	1
Diphtheria,	14	Typhoid Fever,	9
Dropsy,	6	Typhus Fever,	2
Diarrhœa,	3	Teething,	3
Erysipelas,	1	Water on Brain,	5
Fever,	2	Worms,	1
Heart Disease,	2	Unknown,	24
Hemorrhage,	1		
Hydrocephelas,	1	Total,	254
Intemperance,	1		

Ages of the Deceased.—Under 5 years, 122; over 5 and under 10 years, 14; over 10 and under 20, 11; over 20 and under 30, 34; over 30 and under

40, 28; over 40 and under 50, 12; over 50 and under 60, 7; over 60 and under 70, 9; over 70 and under 80, 8; unknown, 9. Total, 254.

NATIVITIES,

Chicago,	120	Canada,	3	Prussia,	1
Other States,	42	Ireland,	29	Switzerland,	3
England,	6	Scotland,	1	Unknown,	10
Germany	32	Sweden,	3		
Bohemia,	1	Norway,	3	Total	254

DIVISIONS.

North, 62 | South, 94 | West, 98 | Total, 254

BERKSHIRE MEDICAL COLLEGE.

THE FORTY-FOURTH ANNUAL COURSE OF LECTURES IN THIS Institution will commence on THURSDAY, JUNE 14TH, 1866, and continue eighteen weeks.

FACULTY.

H. H. CHILDS, M.D., PRESIDENT.
WM. WARREN GREENE, M.D., DEAN.

HENRY H. CHILDS, M.D., Emeritus Professor of the Theory and Practice of Medicine.

CORYDON L. FORD, A.M., M.D., Professor of Anatomy and Physiology.

WM. WARREN GREENE, M.D., Professor of Principles and Practice of Surgery and Clinical Surgery.

ALONZO B. PALMER, A.M., M.D., Professor of Pathology and Practice of Medicine.

WM. C. RICHARDS, A.M., M.D., Professor of Chemistry and Natural History.

HORATIO R. STORER, A.M., M.D., Professor of Obstetrics and Diseases of Women.

A. B. PALMER, A.M., M.D., Acting Professor of Materia Medica and Therapeutics.

HORATIO R. STORER, A.M., M.D., Acting Professor of Medical Jurisprudence.

FRANK K. PADDOCK, M.D., Demonstrator of Anatomy and Prosector of Surgery.

By the recent action of the Officers of the College, two weeks have been added to the Course, making it now eighteen weeks in length; and it will hereafter commence on the Thursday nearest the middle of June, instead of the first Thursday in August, as heretofore; thus giving time for a *full* Summer Course, without interfering with the Winter or Spring terms of other Schools.

It is intended that the Course of Instruction in each Department shall be *eminently* thorough.

Medical and Surgical Clinics are held every Wednesday and Saturday.

Several valuable prizes are offered in different Departments.

Circulars containing full information sent on application to

WM. WARREN GREENE, M.D., DEAN.

Pittsfield, Mass., Feb. 17, 1866.

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Special attention given to Diseases of the Eye and Ear.

Referred, by permission, to the Editor of this Journal.

THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., Editor.

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Original Contributions.

ARTICLE XXII.

PRACTICAL REMARKS ON BLOOD-LETTING.

[CONTINUED.]

By D. B. TRIMBLE, M.D., Chicago, Ill.

The next portion of the subject that will claim attention will be that of diseases affecting the digestive system.

In wounds or other injuries of the parieties of the abdomen, or of the abdominal viscera, venesection is often required to subdue or moderate inflammation.

In many of the diseases of the alimentary canal, (both extra and inter-abdominal,) especially those of an inflammatory nature, blood-letting, general and local, is frequently necessary.

Stomatitis.—In the various inflammations of the mucous membranes of the mouth, there is but one variety—the common diffused inflammation—in which blood-letting is required; and then only in severe cases, and locally, by leeches.

Glossitis, or inflammation of the muscular portion of the tongue, is a disease so dangerous in its tendencies, and so rapid in its termination, as often to require the promptest and most active treatment. The inflammation is of the sthenic type, as shown by the strong and frequent pulse, and hot skin; and asphyxia, apoplexy, or a gangrenous condition of the tongue may end the case fatally, if not relieved. No remedy acts so

promptly and efficiently in such cases as free venesection (followed by leeches to the lower jaw or to the neck below it) repeated until the inflammation is lessened or controlled. When these measures, and other remedial means that may be deemed necessary, do not succeed, free incisions into the tongue may give relief.

In *Angina*, or ordinary sore throat, bleeding is very seldom necessary, but if the disease is severe and accompanied by fever, headache, and a full, strong pulse, moderate venesection may be required. In the *diphtheritic* variety of angina, some authors recommend venesection and leeching, but I have never resorted to it in this disease, and do not favor its use. This affection, if seen in the early stages, is generally easily controlled by other and milder means; and if not seen until the disease is fully developed, the prostration is usually so great as to preclude its use.

Tonsillitis or Quinsy, if seen during the forming stage, may frequently be prevented from proceeding to suppuration by active venesection, followed, if necessary, by leeches to the upper anterior portion of the throat. By this treatment I have sometimes succeeded in preventing the tonsils from suppurating in persons subject to frequent attacks of quinsy. If the patient is aged or feeble, or the fever light, it should be omitted. If venesection or leeching are not required, scarifying the tonsils will afford considerable relief.

In *Pharyngitis and Œsophagitis*, if of the sthenic grade, with a strong, full pulse, bleeding, both local and general, is indicated, though many cases will do well without it. These phlegmasiæ generally terminate in resolution, but sometimes abscesses form, and are the cause of much danger. On this account, chiefly, are antiphlogistic remedies necessary.

Gastritis seldom occurs as an idiopathic affection, but is generally an attendant on some other disease, or is produced by the introduction into the stomach of poisons, or acrid or corrosive substances. When idiopathic and acute, it requires depletion as freely as the phlegmasiæ of the viscera generally; and, also, when an attendant on other diseases, venesection

may sometimes be indicated, though generally not to so great an extent. When caused by poisons or corroding substances, the system is usually too prostrate to bear general depletion; though after reaction (when it occurs), leeches applied to the epigastrium have sometimes a beneficial effect. In those cases, also, which are consequent on other diseases, leeching the epigastrium will often allay the vomiting and pain, and lessen the inflammation. They should also be used in idiopathic cases, after sufficient venesection has been practised. HABERSHON and BRINTON advocate leeching only. In the *chronic* form, venesection is seldom required, unless there is fever, with a full and strong pulse, when a moderate bleeding will often alleviate the symptoms. A few leeches applied over the epigastrium and often repeated, will frequently accelerate the cure.

In *spasm* of the stomach, if there is inflammatory action, venesection may be necessary, or cups or leeches applied to the epigastrium; or, if depending upon spinal ittitation, to the spine.

In *Gastric Irritation*, arising from the same cause, the same treatment is indicated.

In *Ulceration* of the Stomach, HABERSHON recommends leeches applied to the scrobiculus cordis; while BRINTON admits that they will afford temporary relief, but does not advocate their use. To be of any permanent benefit, they should, no doubt, be applied early, and while the ulceration is superficial. In *chronic* ulceration, and in the other organic and functional diseases of the stomach, as tumors, cancers, dyspepsia, etc., it is rarely, if ever, that depletion is indicated.

In *Cholera Morbus*, though some authorities recommend general or local bleeding, it is not, in my opinion, ever required, unless symptoms of gastritis should supervene, when leeches to the epigastrium may be beneficial.

Blood-letting is one of the numerous remedies recommended in the treatment of *Asiatic Cholera*, on which subject there is much diversity of opinion. The remarks that I may make relating to this disease I will quote chiefly from an article contributed to the April number of the *Chicago Medical Journal*,

for 1866. "Dr. GEORGE JOHNSON, Prof. of Medicine in Kings College, takes the position that the collapse of cholera is not due to a drain of liquid from the blood, and strongly advocates free venesection as the remedy chiefly to be relied upon" in many cases. In regard to the effect of venesection on the symptoms of collapse, he says:—"But what has been the effect of venesection in not one or two, but in a large number of cases of cholera, and in the hands of many practitioners?" It is in the writings of the Indian practitioners, that the largest amount of evidence is to be obtained, as to the influence of blood-letting in cholera. Quoting from them, he says:—"ANNESLEY says, in place of syncope being produced by bleeding in the cases which I have treated, the pulse has invariably improved, and the feelings of faintness and debility disappeared." "BELL makes the following statement:—The effect of blood-letting would, indeed, sometimes appear almost miraculous. A patient will be brought in on a cot, unable to move a limb, and, but that he can speak and breathe, having the character, both to touch and sight, of a corpse; yet will he, by free venesection alone, be rendered, in the course of half-an-hour, able to walk home with his friends." After giving still further testimony to this treatment, he says:—"I maintain that the numerous well-authenticated instances of great, and immediate, and permanent relief by means of venesection in the collapse of cholera, are irreconcilable with the hypothesis in question, *viz.*, the loss of liquid constituents of the blood." But Dr. WOOD advises it only "in those rare cases in which the pulse is full and strong, especially if connected with convulsive symptoms, blood should be taken from the arm." In my father's case, referred to in the same article, the system was in the condition referred to by Prof. JOHNSON, the "surface was cool and shrivelled, and the pulse at the wrist almost imperceptible," and this was his physician's reason for bleeding, I suppose on the theory of internal congestion. "Leeching is recommended in some cases, both by Prof. WOOD and Dr. AITKEN. The former advises it in the earlier stages to the epigastrium, where there is tenderness or burning pain in the stomach; the latter, to the

temples, when there is headache." In my own practice I have seldom resorted to depletion, but, from the effects that I have seen produced by it, and the testimony of medical writers to its efficacy, I hope to see it tested, if the disease should appear in our midst.

In *Cholera Infantum*, if there is much tenderness of the abdomen, and not too much depression of the system, leeches may be applied to the epigastrium, sometimes with a happy effect.

The diseases of the duodenum are so similar to those of the stomach, that the treatment applicable to the former is, to a great extent, applicable to the latter. *Duodenitis* and *congestion* of the mucous membrane of the duodenum are the only diseases of this organ in which direct depletion is required.

In *acute Enteritis*, where either the mucous membrane of the intestine only, or all of its coats are inflamed, if the constitution is good, and the pulse full and frequent, venesection is indicated, and generally relieves the constipation which is a frequent effect of this disease, and moderates the pain and the violence of the inflammation. If the disease should occur in the feeble or aged, or in a mild form, bleeding is not required. Leeching or cupping the abdomen over the region of the small intestines should be resorted to when the inflammation is severe and venesection not admissable, or should succeed venesection. In the *chronic* form, general bleeding is seldom required, but leeches are sometimes very beneficial.

The *Cæcum* is also the subject of inflammatory action, a frequent cause of which is its peculiar form, in which, sometimes, the intestinal contents are impacted, giving rise to irritation and inflammation of its coats, and occasionally terminating in ulceration or suppuration. Some years ago, I was called in consultation in a case where the attending and consulting physicians could not agree in regard to the exact nature of the disease. I found the patient with an abscess in the right iliac region, which had opened externally, and from which passed, beside pus, watermelon seeds, fish-bones, etc. He was emaciated, skin of an icterode hue, etc. The attending physician, a young man, was of the opinion that it was a case of hepatitis,

resulting in the formation of an abscess, and that by adhesion between the liver and duodenum a portion of the contents of the latter had passed through the liver, and from the body by its opening through the abdominal wall. The consulting physician, an old and experienced practitioner, was of the opinion that the case was one of typhlitis, caused by the seeds, etc., that had lodged in the cæcum or appendix vermiformis, and that this was the point from which they were ejected. With thir view of the case, I concurred, and the patient dying the next day, gave the opportunity, by a necroscopic examination, to determine the question. The consulting physician's view was fully confirmed, by the appendix vermiformis being found perforated, but still containing some of the seeds, etc,, similar to those thrown off, intermingled with pus. In typhlitis from this cause, depletion could have only a palliative effect; but when produced by cold or any of the ordinary causes, depletion is as beneficial as in enteritis. Professor JACKSON, of Cambridge, relates some cases which he denominates "painful tumors *near* the cæcum, and in which the cæcum may be suspected to take a part." It is characterized by a tumor and severe pain in the right iliac region; in some cases there is fever and constipation, and the abdomen is painful, hard, and tender, when free venesection and leeching promptly alleviated the sufferings, and the cures were generally rapid. In mild cases, leeching only was resorted to.

In an article on the treatment of *Dysentery*, written for the *Chicago Medical Journal*, August, 1865, I stated that during two extensive and severe epidemics that prevailed, "venesection was seldom resorted to; and the few instances in which I did bleed were in persons of good constitutions, in the vigor of life, and where the fever ran high, and in these cases with much benefit." "Though there are diseases in which I would resort to venesection, where many of the physicians of the present day would not, yet dysentery is not one of those diseases, except in peculiar circumstances. The disease often produces great debility, and is sometimes prolonged to several weeks, so that it is necessary to economize the strength of the system as

much as possible; and unless the inflammation of the colon and rectum is of a very active grade, we can generally succeed without it." Dr. WOOD says:—"Bleeding should always be resorted to when there is much pain and tenderness of the abdomen, with febrile action and a vigorous pulse," and, "if the local symptoms are unabated, and the pulse remains firm, may be repeated again and again." On the other hand, HABERSHON remarks:—"I have never observed a case of dysentery, where venesection could have been tried with probable success." I have had much experience in the treatment of this affection, and think one author about as far wrong as the other. I do not remember to have bled in any case more than once, and have attended many cases where there was "much pain and tenderness of the abdomen, with febrile action" that have done well without this measure; and on the other hand, I have resorted to it in cases in which the cure, I am confident, was much accelerated by it, and in which success might not have been attained had it been neglected. I concur, however, with the latter author in his further remarks, that "local depletion is of great service, either applied to the anterior surface of the abdomen or to the anus. The latter more directly acts on the intestine, on account of the connection of the inferior hemorrhoidal with the inferior mesenteric veins." In *chronic* dysentery, if there is much pain and tenderness, leeches may also be applied to the abdomen. In those acute cases, where there are typhoid symptoms or those of an adynamic character existing, venesection cannot safely be resorted to, and but seldom local bleeding.

Diarrhœa is a disease of such varied character, and depending on so many different causes, as to make it difficult to follow any regular line of practice. The only cases in which bleeding is called for, are those of an inflammatory or bilious character, when moderate bleeding, general or local, may be necessary.

In *Colic*, bleeding is recommended by some authorities as useful in relaxing the spasm in that variety of the disease, and also in reducing inflammation. I do not remember ever to have bled in this affection. In bilious, rheumatic, and inflam-

matory colic, venesection may be employed still more freely than in spasmodic colic, especially in the latter two varieties. In bilious colic, the addition of cups to the right hypochondrium will be beneficial.

In *Constipation*, arising either from inflammation, spasmodic action, or obstruction of the bowels from any cause, venesection should be freely practised with the view of alleviating the inflammatory condition, or producing relaxation. Cupping or leeching the abdomen, or leeches applied to the anus, may be used in addition.

In *Hemorrhoids*, where the system is plethoric, venesection is sometimes beneficial, but is seldom necessary. Leeches applied to the anus, or scarifications of the tumors are often highly useful. Since my residence in this city, I have had one severe case of piles, of long continuance, cured, at the time, chiefly by the application of half-a-dozen leeches and the recumbent posture. I had previously scarified the parts with but slight benefit. The attacks since, have been very light and infrequent.

In *Prolapsus Ani*, if the bowel cannot be reduced on account of inflammation and tumefaction, or constriction of the sphincter, venesection will be indicated, followed, if the inflammation and spasm are not subdued, by leeches to the nates.

For similar reasons, venesection is often required in *Hernia*, particularly if strangulated. It will sometimes so far relax the stricture, and reduce the size of the protruded intestine, as to produce a voluntary reduction; and if not, renders the taxis more speedily and safely successful, and lessens the danger of subsequent inflammation.

In *Peritonitis* of the acute and puerperal forms, prompt and active depletion is the sheet-anchor of hope. Full venesection at the commencement of the disease, repeated once or more, if necessary, and followed by the application of leeches to the abdomen, can seldom be omitted without great risk to the patient. Nor can the pulse or countenance be taken for the guide for this remedy in this disease, for the pulse is generally small and very frequent, though corded, and the face pale. The pulse is often rendered freer, fuller, and slower by venesection,

and when this is the effect, it may be continued without fear of evil consequences. This treatment applies to mesenteritis, omentitis, or other partial inflammations of the peritoneum, equally, though modified in degree, as to peritonitis. In *chronic* peritonitis, leeching the abdomen occasionally, is sometimes required.

In acute inflammation of the *Mesenteric Glands* either as the result of enteritis, or connected with a strumous condition of the glands, leeches or cups may be applied to the abdomen with the view of preventing the formation of abscesses, or to retard the progress of the disease when tuberculous.

In many diseases of the accessory organs of digestion, direct depletion is often required-

In some diseases of the *Liver*, it is frequently of very great benefit.

Hepatitis.—The phlegmasiæ of the liver, arising from various causes, affecting different portions of the viscus, differing in their characters, and producing different effects, cannot properly be treated of under one general head. Dr. BUDD, in his work on "Diseases of the Liver," classifies them as "suppurative," "gangrenous," and "adhesive inflammations," "inflammation of the veins of the liver," and "of the gall, bladder, and ducts." While Dr. WOOD, in his work on "Practice," in more general terms, considers it as affecting "the substance of the liver, its investing peritoneal membrane, or both;" or involving "the whole organ, or only a part." As my object is to treat of one only of the remedies applicable to this disease, (as well as to others,) I cannot enter into an elaborate consideration of the various forms of inflammation, in this connection. In suppurative inflammation, if caused by external violence to the liver, or by ulceration of the stomach, intestines, or gall-bladder, BUDD recommends depletion, especially local, whereby the extent of the inflammation and abscess may be lessened, and, in some cases, the latter be prevented from forming. But if caused by phlebitis, consequent upon injuries to the head or limbs, "the whole mass of venous blood is contaminated by pus," a typhoid condition is soon induced, and bleeding is contra-in-

dicated. BUDD lays much stress on the danger of opening abscesses of the liver, and he is probably correct, as his experience in this class of diseases was very great; but in the few cases that I have attended, I have had no unfavorable symptom following the operation as its sequent. Twelve or fifteen years ago, I attended a middle-aged man, who was reduced to a state of extreme prostration and emaciation by a severe attack of hepatitis, terminating in the formation of a very large abscess, which *pointed* in the lower portion of the right hypochondrium. I lanced it, and an immense amount of pus was discharged, from which time he began to improve, and was slowly, but entirely, restored to health. One of the principal effects of *adhesive* inflammation of the liver, is the production of *cirrhosis*, which soon terminates, if not relieved, in an atrophied condition of the organ. If the disease is seen at its commencement, which, from its insidious character is not often the case, among the most efficient remedies are cupping or leeching over the region of the liver. "While there is much tenderness, and some degree of fever exists, nothing produces so much relief as the local abstraction of blood." (BUDD.) This remedy must be more cautiously used in the cases of the habitually intemperate, and, unfortunately, the use of alcoholic drinks is the most frequent cause of the disease. There are other forms of hepatitis beside those already considered, arising from other causes, as when the result of pneumonia, scarlatina, etc., and where antiphlogistic measures are indicated. In acute hepatitis, when the pulse is full and strong, and the constitution good, without having regard to the peculiar character of the inflammation, free venesection should generally be practised, and repeated if the symptoms are not alleviated. "Local bleeding is an excellent auxiliary to the lancet, or substitute for it when forbidden. It is very rarely indeed that, in acute hepatitis, blood cannot be taken with propriety from the vicinity of the disease." (Dr. WOOD.) In *chronic* hepatitis, local depletion alone is required, and that only occasionally. In inflammation of the *biliary ducts*, and of the *gall-bladder* and *ducts*, leeching the right hypochondrium or epigastrium, and, occasionally, general bleed-

ing is indicated. "Leeches relieve the pain and tenderness, and mitigate the inflammation, and, in consequence, lessen the danger of perforation and of permanent closure of the ducts." (BUDD.)

In *Congestion* of the liver, local, and sometimes general, bleeding may be necessary, but in the great majority of cases these measures may be omitted, other remedies being sufficient.

In *Biliary Calculi*, venesection is sometimes beneficial, by relaxing the spasm of the duct and enabling the calculi to pass; and also in subduing inflammation. If the patient is robust, and not too much prostrated, this measure may greatly aid the cure, but often the prostration is so great as to contra-indicate it. If there is much tenderness after the passage of the calculi into the duodenum, leeches should be applied over the region. Though not strictly a portion of our subject, it will, perhaps, not be deemed intrusive if I relate a case in which death was caused by a gall-stone. The patient was a middle-aged married woman, who had been in ill health for several years, with symptoms of indigestion, and was eventually confined to her room for months. She had frequent attacks of vomiting, her food returning often undigested, and was generally constipated. Sometimes she had diarrhœa, but no bile, either in the substances vomited, or in the dejections. Her skin was slightly tinged with an icterode hue, more like its appearance in cancerous affections than in jaundice; there was a small tumor in the epigastric region, and some tenderness. She became greatly emaciated, and I thought her disease was scirrhus of the pylorus. But the necroscopy exhibited an undiseased, though greatly contracted, stomach; and, in examining the liver, I discovered a calculus as large as a pigeon's egg, embedded in its substance where the choledoch duct *should have been*, but of which there was not a trace. The connection between the gall-bladder and duodenum was completely obliterated; of course, no bile could pass into the latter, and digestion and life were eventually destroyed. Another singular *absence* in this case, (though having no bearing on our subject,) was that of the uterus. There was no trace of it, and no appearance indicating that it had ever existed.

Jaundice.—In those cases of jaundice where there is tenderness of the right hypochondrium, or of the duodenum, leeches applied to either part, respectively, may afford much relief. In some cases, especially if there is much arterial excitement, it may be necessary to take blood by venesection, but the great majority of cases do not require it. Drs. Budd, Wood, and Jackson, of Cambridge, especially the latter, recommend leeching in this disease. Though admitting its propriety where there is vascular irritation of the liver, gall-ducts, or duodenum, I have seldom resorted to local, never, I believe, to general depletion in jaundice, believing it to be rarely indicated by the symptoms.

Of the diseases of the Pancreas, *Acute Pancreatitis* is the only affection that requires general bleeding, though in *Chronic Pancreatitis*, as in the acute, and in *Cancer* of this viscus, when inflammation exists, leeching is beneficial. Just before my removal to Chicago, I lost an old patient and friend in Philadelphia, of cancer of the pancreas, the only case I ever saw. His disease commenced, (or rather the first symptoms indicating it,) with an inability to retain his food, which, in the course of a few weeks, merged into active and severe emesis, severe lancinating pain in the epigastrium, a deeply jaundiced appearance of the skin, and great emaciation, terminating in death in about four months after the symptoms were developed. The diagnosis in his case was not clear, and his physicians were in some doubt of the exact nature of his disease until the autopsy revealed it.

Though the functions of the spleen are not certainly determined, yet its situation in the abdomen, and proximity to the most important organs of digestion, appear to render this the proper place to consider the diseases to which this organ is subject, and which require depletion.

In *Acute Splenitis*, both general and local bleeding are required in the majority of cases. Where there is great debility, or in the chronic form, this treatment should be restricted to leeches applied to the left hypochondrium. I have frequently attended cases of splenitis, and where I have resorted to deple-

tion, found it to relieve, promptly, the pain, lessen the tumefaction, and facilitate the cure. I was once called, in the absence of his physician, to a young man whom I found in a dying condition, and who died in a few hours. The next day, (his physician not having returned,) I was summoned by the coroner, in connection with another physician, to hold a *post mortem* examination, as it was supposed, from circumstances, that he had been beaten to death. With the exception of a slight bruise on one temple, (which might have been caused by a fall,) there was no external mark of injury. On opening the abdomen, we found a large quantity of blood in its cavity; and on examining the spleen, there were two ruptures disclosed, each crucial in form, and the spleen (which had apparently been much enlarged) was shrivelled or contracted. The patient had formerly, and but a few months before, had intermittent fever, and lived in a miasmatic region. Whether the engorged spleen had been ruptured by a fall or a blow, it was difficult to decide; but the absence of any external mark over its region inclined us to the former opinion. I suppose it was a case of chronic inflammation, enlargement, and softening, induced by malarial influences.

In some cases of *Congestion* of the spleen, if the constitution is robust and the disease active, bleeding may be resorted to; but it is not generally required.

June 6th, 1866.

ARTICLE XXIII.

EDITOR EXAMINER:—The following letter, from our intelligent and ingenious friend, Dr. JOHN A. YOUNG, of Monmouth, so clearly expresses his views, as to the theory and therapeutics of cholera, that I am induced to think that it would be interesting to your readers. Should you agree with me in this respect, I hope to see it in your valuable periodical.

Respectfully,

W. H. BYFORD.

Monmouth, May 17th, 1866.

Prof. W. H. Byford,

Dear Friend:—Will you be kind enough to bear with me whilst I may inflict upon you a long, and perhaps profitless, communication. My object is to present a few thoughts and suggestions that have occurred to me, upon that *much-abused* subject—the treatment of cholera. And, to come directly and at once to the point, to direct your attention to, and ask your opinion in regard to, the use of Belladonna, or its active principle, Atropine, in impending collapse, or, after this stage has set in—administering by hypodermic injection. I do not know whether this has ever been proposed or acted on by any one or not; if it has, I am not aware of the fact.

I will endeavor, in as brief and concise manner as possible, to state to you the process of thought that led me to the conclusion that atropine might, at least, prove an useful auxiliary in that condition. I will admit that I was, perhaps, *too* favorably impressed with the theory of Dr. Chapman, of London, when it was first announced, owing, doubtless, to the fact that I was at that time much interested in studying the works of Brown-Sequard, upon the pathology of the nervous centres. The subsequent reports made by Dr. C. and other physicians of Southampton of the trial of his method rather confirmed me, although the cases were too few in number to establish it.

Since that report, I have carefully read the lectures of Dr. Geo. Johnson, Prof. of Med. in Kings College. In speaking of Dr. Chapman's theory, he designates it as "a speculative web, spun from the projector's brain." What special part of the theory he views in this light, he does not state; but, in advocacy of his *own* theory of the cause, pathology, and treatment of cholera—which he puts forth with great boldness—asserts, as an incontrovertible fact, that collapse is *not* occasioned by depletion from loss of serum, but by *spasmodic contraction* of the capillary branches of the pulmonary artery, preventing due oxygenation of the blood, etc., etc.

He contends that a morbid material is conveyed by the *blood*,

causing irritation and consequent spasm, therefore we must *eliminate.*

But, if his theory of collapse is correct—and which he thinks and *probably proves* to be correct—then why not resort to some means calculated to act directly on the vaso-motor system.

If we can only protect the nervous system, or so modify its action as to render it insensible to the influence of the morbid material, prevent contraction, and maintain the circulation, surely we have attained an important point.

Practically, it is of but little importance to us to know whether the essential cause of the disease has acted primarily upon the nervous centres, or has been conveyed to them by the blood. The all-important question is, what is the true condition present in a given case, and how shall we remedy it, leaving the abstract question of the essential cause to be settled at leisure.

One authority more:—In the last No. of the *London Lancet*, we have a lecture from Dr. MACLEAN, Deputy-Inspector-General, on the treatment of cholera; and in referring to the theory of Dr. CHAPMAN, speaks of it as an "ingenious one;" and although he differed materially from Dr. C., as to the mode in which the disease is propagated, says he would "gladly give it a fair trial, and, had the disease appeared in Victoria Hospital, was prepared to do so." The mode of propagation to which he refers, I understand to be Dr. C.'s position, that the hyperæmic condition of the nervous centres presiding over the bowels is caused by "*excessive external heat.*" This he denies, and adduces the proof.

To my mind, however, this objection does not materially affect the question.

Does this hyperæmie condition actually exist, let the cause be what it may?

If so, then, in accordance with the theory of BROWN-SEQUARD, we have, in belladonna, a remedy of great potence in such condition.

I would also adduce, in favor of the idea, the well-known facts of the effect of full doses of this drug upon the capillaries

of the skin, producing engorgement, with redness and heat, simulating scarlatina, and just the opposite of collapse.

Yours, &c.,

J. A. YOUNG.

ARTICLE XXIV.

CASE OF VESUO-VAGINAL FISTULA—OPERATION ON.

By DARIUS MASON, M.D., Prairie du Chien, Wis.

Jan. 7th, 1862. I was called to see Mrs. W., aged 18 years, married about 12 months. She had been delivered of a male child, weighing 10 pounds, on the 1st of November, 1861, after a severe labor of about 60 hours. She was apparently convalescing well, until the 6th of November, when she discovered her urine passing involuntarily, and which had so continued up to the time of my visiting her. Upon examination by passing an ordinary female catheter into the bladder, the tip of the forefinger, *per vaginam*, came in direct contact with the catheter, through an oval opening about five lines across its long diameter transversely across the vaginal wall, and about two inches from the orifice of the urethra. The patient being in other respects in good health, I proposed an operation as soon as convenient.

Assisted by the late Dr. B. F. White, of Prairie du Chien, and Drs. Andros and Martin, of McGregor, Iowa, I operated on the 17th of January. The patient put under chloroform, and placed in lithotomy position, and by the aid of Dr. Simm's retractor, or duck-bill speculum, the fistulous opening was brought into view, when, with a long-handled knife, the vaginal mucous membrane was removed completely round the opening, extending back from its edge about two and a-half lines. I next passed four silver wire sutures, about 12 inches long, by a needle held by the *porte-aiguille* piercing the mucous membrane about two lines from the cut margin, and making its exit at the

margin of the opening, and entering the opposite margin of the opening and again making its exit through the mucous membrane, the same distance from the cut surface as at the first point of entrance; a perforated silver plate or button, of an oval shape, slightly concavo-convex, about three-fourths of an inch long, was next passed down upon the wound, the two ends of each suture passing through a perforation in the button or plate; the next step, was the passing of a perforated shot over each suture snugly down upon the plate and firmly pinched by a strong forceps, the wires were then cut close to the shot. The patient was then placed in bed upon her back, a sigmoid catheter introduced with a flexible tube attached, a single grain of opium was given immediately, and one grain every four hours for the next forty-eight hours; diet, dry toast and tea. The catheter was removed and cleansed every morning.

On the 19th, menstruation commenced, and continued through the 21st, after which, the vagina was washed every morning with tepid water. All the urine passed by the catheter, which produced very little irritation until the 24th, when it began to be very troublesome, and it was removed for two hours at a time during the day.

On the 26th, assisted by the late Dr. WHITE, I removed the plate, and found the union perfect, except a small spot about the centre of the wound which appeared to be a little ulcerated; all the urine passed by catheter introduced every four hours. By the aid of a warm water enema, the bowels were moved on the 27th. On the 29th, a little urine escaped involuntarily, and examination revealed a small opening through which an ordinary director might be passed, at the point of apparent ulceration mentioned, and through which the urine was escaping.

It was thought best that the patient should rest a little from this operation before undergoing another; consequently, the second operation was deferred until the 20th of February, when the same steps were gone through with as in the first operation, the sutures and plate being removed on the 20th of February, and the wound was well united, and, I may say, she has had good health up to the present time, having no difficulty in retaining or voiding urine.

On the 4th of October, 1865, she was delivered of a female child, weighing about seven pounds, after an easy labor of about four hours.

Proceedings of Societies.

PROCEEDINGS OF THE SEVERAL SECTIONS OF THE AMERICAN MEDICAL ASSOCIATION, DURING THE RECENT MEETING IN BALTIMORE.

The greater part of the following report of the doings in the several Sections is copied from the *New York Medical Record, for May, 1866:—*

SECTION ON PRACTICAL MEDICINE AND OBSTETRICS.

DISCUSSION ON DIPHTHERIA.

The section was organized by the appointment of Dr. Lake J. Tefft, of New York, Chairman, and Dr. W. B. Bibbins, of New York, Secretary.

Dr. H. D. Holton, of Putney, Vermont, Chairman of the Committee on Diphtheria, as it had prevailed in the United States, made a report by reading an elaborate and interesting paper. He gave a history of the disease from its first appearance in this country, more than a century since. He insisted that diphtheria should not be confounded with follicular tonsilitis and kindred affections; in fact nothing should be dignified with the name that did not present the characteristic exudation, with swelling of the cervical glands, etc. Neither should it be confounded with scarlatina or croup. Tables were presented showing the fatal months, the proportion of deaths at various ages of the three diseases. The disease was divided into diphtheria simplex, diphtheria maligna or gangrenosa, and tracheal diphtheria. He entered at some length into the discussion of the sequelæ, stating that they were paralysis, rheumatism, and general cachexia.

After discussing the various plans of treatment, he divided it into local and general. Such mild cathartics should be used as the case seemed to require, although nothing like active purgation should be indulged in. Chlorate potassa should be given pulverized with an equal amount of sugar, a little placed in the mouth, and allowed to run down the throat, that the local as well as the constitutional effect might be obtained.

Sulph. quinin. and tr. ferri chloridi should be used as occasion required; also alcoholic liquors, either alone or combined with cinchona bark; wine whey, milk punch, and beef-tea were to be used to support the patient when a nourishing diet could not be taken.

The local applications should be such as would prevent the absorption of fluid portions of the exudation. For this purpose persulphatum ferri was recommended; also the following: R. Tr. ferri chlorodi, chlorat. potassæ *aa* ℥ j; glycerine pure, ℥ ij. Misce. Either of these to be carefully applied with a soft brush. Externally, an infusion of hops in lye of wood ashes would be found the best for any hot fomentation.

The following deductions were made: 1st. That diphtheria has occurred as an epidemic from time to time from the first settlement of this country; 2d. That it is a distinct disease, on no account to be confounded with scarlatina or croup; 3d. That it is particularly a disease of childhood, although it exempts no age; 4th. That it is communicable to that degree that it is the duty of every physician to separate the infected from those that are well, particularly in children; 5th. That it is a disease primarily affecting the blood, consequently the treatment to be effective must be not local but general, and of such a nature as to eradicate or neutralize the poison; such local treatment should, however, be used as will prevent the absorption of fluid portions of the exudation; 6th. That when the exudation has invaded the trachea, the only hope of saving the patient is in tracheotomy.

On motion of Dr. Ellsworth Eliot, of N.Y., the report was referred to the Committee on Publication.

Dr. King wished to take exception to the remark made in this paper that when the membrane is thrown off from the trachea the patient will almost always get well. He had seen two cases, one a man and the other a child, in which the membrane had been thrown off and both had died. He could not believe that the cast-off membranes were ever re-absorbed. He stated that he had ceased to use local applications for anything more than their antiseptic effects; and for this purpose he thought that the solution of common salt was as good as anything else.

Dr. Gallagher, of Pittsburg, Pa., expressed himself much pleased with the report. He regretted, however, that the author had made no reference to the use of alum as a local application. He had used that remedy with the happiest effects, and had more confidence in it than all the others. He had

used also with great satisfaction the ordinary "hard cider," with a view of assisting the elimination of the morbid materials by the kidneys.

Dr. Worthington Hooker, of New Haven, stated that there was a great tendency in the profession to run into extremes in reference to treatment. He was not disposed to think that any disease could be successfully treated by following any one plan to the exclusion of others. The really rational plan was to follow all the indications in the particular case as they might arise. There were many marked distinctions between croup and diphtheria, but he chose only to refer to the want of that severe constitutional disturbance in the former which is never absent in the latter disease.

Dr. McCollum, of Vermont, stated he had seen 200 cases of the disease in his county within the last five years. He had seen three or four cases recover after the membrane had been cast off. He never used gargles except as disinfectants. As regards ice, he had noticed benefit from its use in a great many cases. He had also been in the habit of allowing his patients to inhale the vapor of acetic acid, and with marked benefit.

Dr. Gross, of Pittsburg, stated that he had had a large experience in the treatment of diphtheria in his district, and had come to the conclusion that the best means of treatment consisted, first in the use of calomel as an antiphlogistic, followed by the very free use of chlorate of potash. He had seen 400 or 500 cases of the disease since he instituted this plan of treatment, but had not met with a single fatal case. He also, in conjunction with the foregoing remedies, made use of the solution of nitrate of silver (20 grains to the ounce) as a local application, as well as saturated solutions of alum and lemon-juice on crushed ice.

Dr. Bibbins, of N.Y., stated that some time since the question was asked him by Prof. A. Clark—What was the number of cases of diphtheria which he had met with in dispensary practice? Dr. Bibbins, before he was prepared to answer such a question, wished to know from Dr. Clark what he understood to be true diphtheria—whether the essential symptoms of the disease were considered to be adenitis, false membrane, fever, and depression of the vital powers. "Of course," replied Dr. Clark, Dr. A. Jacobi, who had studied this subject very thoroughly, has published the fact that these symptoms are always essential to the disease. A certain proportion of cases must be distributed to each individual; and such being the fact, they could not but believe that when gentlemen report such a

large number of cases as occurring in their practice they do not take into account the necessary symptoms of diphtheria; that a great many report cases which they call diphtheria, which other practitioners are not willing to admit as such. He remarked that the average mortality of true cases of diphtheria among dispensary patients was thirty-three per cent., and did not suppose that under any treatment this mortality could be much decreased. Dr. A. Clark had reported the same rate of mortality. Dr. Bibbins was led to believe, from the cases which he had met with, that the tonic and supporting plan of treatment was the only reliable one.

Dr. Shumway, of N.Y., had used with great benefit, as local applications, the nitrate of silver stick, the chlorate of potash, and the chlorate of ammonia. He apprehended that the great difficulty with many patients that were convalescent was not that they did not get medicine enough, but that there was paralysis of the throat which prevented them from swallowing them. In those cases he had used nutritive injections into the stomach with very good results.

Dr. Davis, of Ill., spoke in this connexion of blood-poisoning in many diseases, diphtheria among the rest. He thought that there was yet a great deal to be learned with reference to the true pathology of these so-called blood diseases. The query had arisen with him whether diphtheria really depended primarily upon a poison in the blood, or whether the altered condition of the blood itself, instead of being primary, was itself a secondary consequence of a prior change in the properties of the organized tissues of the human body. He discussed this question at a considerable length, showing the probability that there might be such a fundamental error in nutrition, as that assimilation or disassimilation was so interfered with that the blood was poisoned in consequence.

Dr. Hewitt remarked that he had great faith in the solvent power of both alum and chlorate of potash on the diphtheric membrane. He had taken pieces of the membrane that had been separated, and had dissolved them entirely in solutions of these salts. His treatment was to take a glass tube, pass it back into the fauces, and inject one or other of the solutions directly against the affected parts.

Dr. McIntyre, of Concord, N.H., was of the opinion that if there was any error in nutrition, it was secondary to the formation of the membrane in the throat, which by obstruction to the respiration interfered with the proper oxidation of the blood. This he considered to be the starting-point of the constitutional

trouble. For the purpose of aiding the system in the elimination of the poison in the later stages of the disease he had used colchicum seed, guaiac, and nitrate of potash, with much satisfaction.

Dr. Taylor, of Iowa, did not think that there was any good to be attained by suggesting this and that remedy for a disease which had existed in every section of the country; for different remedies must be used in different localities, and he thought the best guide for any general plan of treatment was to be found in a proper, thorough, and enlightened view of the pathology of the disease.

The meeting then adjourned.

SECOND SESSION.

Dr. Lake J. Tefft in the chair.

The second meeting of the Section was held at the Dental College, corner of Hanover and Lombard streets, on Wednesday, May 2, 1866, at 3.45 P.M.

The minutes of the last meeting were read and approved.

Dr. James J. Levick, of Philadelphia, read the "Report of the Special Committee on Spotted Fever."

On motion of Dr. Henry D. Holton, of Putney, Vt., the report was referred to the Committee on Publication, with a recommendation for its publication in the Transactions of the Association.

INHALATION OF NEBULZIED FLUIDS.

Dr. J. Solis Cohen, of Philadelphia, read a paper entitled "Remarks on the Inhalation of Nebulized Liquids, and their Topical Application to Inflamed and Ulcerated Surfaces."

The reader stated that his design was not so much to present a review of the knowledge of the profession on these topics, or to bring forward any of his peculiar views, as much as to give a resumé of the results thus far obtained from recent experience, with a view of eliciting upon a subsequent occasion a valuable paper on the whole subject of the Therapeutics of Inhalation, which should embody the experience of a number of observers, and furnish the profession with authoritative data for their general investigation, inasmuch as the literature on this subject, especially in this country, was very meagre and unsatisfactory.

The paper stated that the idea of treating diseases of the respiratory organs by inhalation, which should bring remedies directly in contact with diseased surfaces, was as old as the healing art itself; for what was more natural than to imitate the entrance of the vivifying breath of life in its access to the

economy? The records of classic Greece and Rome show that this principle was taken advantage of in the inhalation of volatile substances, and in the residence of patients upon the seashore, and in the neighborhood of volcanoes. This method of treatment fell into disuse, and was again resorted to many times, and had fallen into permanent neglect for a long period, until the discoveries of oxygen leading to further chemical research, and the promulgation of the exhilarating effects following inhalation of the nitrous oxide gas, again directed attention to the subject of inhalation as a remedial agent. Then the ammoniacal exhalations from cattle-yards, stables, etc., became largely employed in many affections, until too extended empirical application to all the ills of life meeting with failure, led the whole system into disuse, even for these affections for which it was originally intended. The discoveries of the properties chlorine, iodine, etc., of the effects of the smoking of opium among the Chinese, led to the employment of similar substances; and the whole series of narcotics, resins, and all substances producing vapor became employed in this manner.

Observations of the diseases affecting workers in minerals, metals, etc., and the *post mortem* revelations of the scalpel, proving the entrance of particles of dust into the lungs, led to the therapeutic employment of powders by inhalation.

After some other general remarks of a similar nature, the paper went on to relate that within a few years a new method of presenting *liquid substances* for inhalation *as such*, had become much employed in Europe, and seemed to promise an extensive field of success in the treatment of the whole class of pectoral troubles.

Every one is familiar with the effect of a stream of water directed upon the side of a house, how a large portion of the volume of water is directed back in a shower of small streams, or coarse spray. In certain bathing establishments in Germany, many liquid applications are made on this principle to the surface of the body in the treatment of affections of special organs, and of the general system likewise. Streams of the medicated liquid are forced against metallic plates on the walls of the bathing apartments, and fall over the desired surfaces in this shower of coarse spray.

It having been noticed that amelioration of concomitant chest affections seemed to follow this exposure for other purposes, patients were sent to these establishments to respire the air thus impregnated. The beneficial results obtained at the Inhalatorium of Dr. Auphan, of Eaux-les-Bains, established in

1849, led to similar establishments elsewhere, until finally, Sales-Girons, who in connexion with Flubé had in 1856 erected an inhalatorium at Pierre-fonds, conceived the idea of constructing on this principle a portable apparatus which could be employed by patients at their residences, and thus admit of much wider application. Sales-Girons exhibited an instrument of this kind to the Academy in 1858. His apparatus consisted of a condensing syringe, which forced a very fine stream of liquid against a convex metallic button, converting it in deflection into a very finely divided spray, having much the appearance of a dense fog or mist, the separate particles of which, suspended as they are for a time in the atmosphere playing around much like the dust observed in a sunbeam, can be drawn into the lungs by inspiration.

The paper referred to several of these apparatus, especially the modification of the tubes of Bergson, and the employment of steam by Siegle, in lieu of the compressed air, and stated that experiments upon living animals proved the entrance of these particles into the air-cells; though for various reasons, the spray striking against many surfaces during its ingress, its dissipation into a much larger volume than could be received into the mouth, etc., but a small quantity of the liquid thus nebulized (the writer thought not more than twelve per cent), could reach the smaller bronchial ramifications.

The writer thought that the application in this manner of liquid substances of known strength directly to the diseased surfaces would prove more prompt in effect, whether for good or ill, than when the entire current of the circulation became the vehicle of communication, perhaps affecting the general system when not desirable. The mucous membrane of the lungs is quick to absorb, secretes no chemical product to modify chemical medicines, and has no temporary ingesta to interfere with the direct action of remedial agents applied to it.

Although the results thus far obtained are far from being positive, and many of them unsatisfactory and negative, still they are such as to justify careful research into this new method of medication.

Some conclusions were then given as the results of recorded experience; the results of the writer's personal experience and observations, and the results of extensive experiments, carefully conducted by Dr. J. M. Da Costa, at the Pennsylvania Hospital, as well as those obtained by the latter named gentleman in his private practice.

A few remarks followed as to the manner of preparing medi-

cines for employment in this way, and their application when different parts of the air-passages were to be medicated.

Allusion was made to the employment of this system of nebulization for local applications to inflamed and ulcerated surfaces on the exterior of the body, and a certain distance within the various cavities, and an instrument devised for this purpose was exhibited, to demonstrate that in a second or two a layer of a caustic or other solution, many times more delicate than any film which could be deposited by the slightest touch of a hair pencil, could be directed upon an ulcerated or inflamed surface, whether of large or small surface. A continuous application of course can be kept up when desired, and in this connexion the method was recommended for the production of local anæsthesia for minor operations in surgery—a subject at present exciting a good deal of attention, and brought to the notice of the profession by Dr. B. W. Richardson, of London.

On motion, the paper was referred to the Committee on Publication, for publication in the Transactions of the year; but at the request of the writer the motion was modified to call for the appointment of a special committee to report on the "Therapeutics on Inhalation," at the next annual meeting of the Association.

On motion, the paper was received.

Dr. J. E. Clawson, of Delaware, moved that the Section appoint a Special Committee on the Therapeutics of Inhalation, to consist of three members, and that the paper of Dr. J. Solis Cohen, just read, be referred to that Committee. Carried.

The Chairman appointed as such Committee:—

Drs. J. Solis Cohen, Philadelphia; J. M. DaCosta, Philadelphia; L. Elsberg, New York.

Adjourned.

THIRD SESSION.

The Section met at Concordia Hall, on Thursday, May 3, 1866, at 1.45 P.M.

In the absence of the chairman, Dr. Ellsworth Eliot, of New York, was elected Chairman *pro tem.*

The minutes of the last meeting having been read and approved, the Section adjourned *sine die.*

SECTION ON MEDICAL JURISPRUDENCE, PHYSIOLOGY, AND HYGIENE.

First Session, May 1, 1866.

The session was organized at Concordia Hall, 3 P.M., May 1,

by electing Dr. Wilson Jewell, of Pennyslvania, Chairman; and Dr. A. N. Bell, of New York, Secretary.

REPORT ON DISINFECTANTS.

The first paper called up was the Report on Disinfectants, which was read by Dr. E. M. Hunt, of New Jersey, chairman of the committee. On motion to refer it to the Committee on Publication, it was brought under discussion by Dr. T. Antisell, who, though he considered the report in many respects an able one, did not regard it sufficiently elaborate, particularly in the special utility of dry heat for the destruction of fungous organisms resulting from the exposed excreta of persons sick of the cholera. While he regarded the most scrupulous cleanliness and care in the removal as speedily as possible, of all accumulations of whatever kind from such persons; yet he thought that here disinfectants had their chief application, and that if means could be divised for the thorough application of heat to all such accumulations, the poisonous quality for the diffusion of the epidemic would be destroyed. Of ozone and other disinfectants dwelt upon by the committee, he thought them of much less importance; and that they occupied too large a space in the report, to the exclusion of that which he considered so much more useful.

Drs. Green, C. A. Lee, E. R. Squibb, Jas. Hibberd took issue with Dr. Antisell as to the province of the committee in the report, regarding it in the main as sufficiently elaborate, and more strictly in accordance with what reports for the Transactions of the Association should be, than if it went into collateral subjects.

Drs. Hunt and Bell defended the report on the ground that it was necessarily a chief effort on the part of the committee to present a resumé of such facts as had from time to time been brought to notice in the history of disinfectants; and that it would not only be out of the province of the committee, but quite impossible, to report upon the special indications for the application of disinfectants to the various supposed causes of disease, such as the one presented by Dr. Antisell.

The motion to refer the paper to the Committee on Publication was then put, and the paper was so referred.

On motion, it was voted that Dr. Antisell be requested to prepare a paper for the next Session of the Association, *On the Causes of Epidemics.*

INFLUENCE OF ELECTRICITY ON EPIDEMICS.

The next paper taken up was the report of a special com-

mittee on the Influence of Electricity on Epidemics, by Dr. Squire Littell, of Philadelphia.

The report was presented to the Section on Hygiene at the last session of the Association, but owing to its length was not all read. It was deferred for the time, and owing to the supposed absence of the author from the country, the paper was omitted from the Transactions. Members of the section present who had carefully examined the paper, spoke of it in high terms, and as being well worthy of publication in the Transactions. But as it was a long paper, and had already been examined, and in part at least discussed, they did not deem it worth while to again occupy the section with its consideration.

On motion, it was referred to the Committee on Publication. The section then adjourned.

Second Session, May 2.

THE USE OF PERMANGANATE OF POTASH.

Dr. B. F. Craig read a paper on the use of permanganate of potash for the purification of water, especially during the prevalence of epidemic cholera.

The points of the paper were presented by Drs. C. A. Lee and E. R. Squibb, namely, that the disinfecting agent in the use of the permanganate of potassa and allied substances—was ozone. According to the remarks of Dr. Squibb, the power of disinfecting substances generally, excepting some, such as charcoal, which are absorbents, can be measured in a certain degree by the facility with which they give out or abstract oxygen. The paper under discussion was defective, in that the author assumed that the organic matter present in nature is the cause of cholera; and also that he took no note of the deposit of carbonate of potassa that would take place even to a mischievous degree in the use of the remedy. Yet, upon the whole, the paper should be regarded as a contribution to the important subject of disinfectants. It was, on motion, voted to commend it to the Committee on Publication.

COMPULSORY VACCINATION.

Compulsory Vaccination was presented as a subject of discussion by Dr. A. N. Bell, chairman of the committee on that subject. While he regarded the literature of *vaccination for the profession* exhausted, he considered the field still large for the purposes of the committee, namely, the diffusion of information among the people; and his chief object in presenting the subject in this manner, instead of by formal report, was to elicit the expression of the Section as to the best means of dif-

fusing information. In the Southern States, especially, a new field was now open for reaching a large number of persons requiring vaccination and revaccination, in order to put a stop to the ravages of small-pox, and he hoped that some of the gentlemen present would be able to assist the Committee in devising means for such a purpose.

Dr. Wm. M. Charters, of Georgia, described the terrible ravages of small-pox among the negroes at Savannah on the arrival of General Sherman's army, and attributed it, not to any want of a correct appreciation of the utility of vaccination, but to the *imperfect manner* in which vaccination was performed.

It was the practice, to a great extent, to commit this subject to unprofessional persons. In the Southern States, especially, masters and overseers thought themselves equally competent with physicians for so simple an operation. But the result justified the conclusion that the disease they communicated was frequently a *vaccinoid* sore only, and not a vaccine vesicle. The operation was performed more with reference to making a *sore* than anything else, and that was regarded as the prophylactic, but exposure proved to the contrary. In other cases, however, and these were by no means insignificant, vaccination had been well performed and it had taken perfectly, but the susceptibility to it and to small-pox not having been exhausted, the individual was was still liable. He therefore advocated exhaustive vaccination to begin with; let the operation be repeated until it ceases to produce an impression, and he believed susceptibility to small-pox would be destroyed for the whole lifetime of the individual. To accomplish this, he believed in the necessity of compulsory laws, requiring every person to be thoroughly vaccinated, under such penalties as would insure compliance.

Drs. Lee and Hibberd referred to the ineffectual State laws on the subject, and also to the no less ineffectual laws of England, and thought that something more was required.

Dr. Nebinger did not believe that such laws could ever be made effectual in this country, and thought that the work of the Committee to diffuse information—which, so far as vaccination without danger, or a belief in its prophylactic powers was concerned was effectual—only now need to be pressed to the equal necessity of *re*vaccination. On the necessity of *re*vaccination, he knew that there were yet many physicians and a multitude of other people needing information. He cited several cases in illustration. He hoped that the Committee would be continued, and that every member of the Section would do his utmost to

press upon the attention of the profession and the public the facts that had been already presented in the last year's report.

Dr. Toner expected much good to result from registration, a subject that was now attracting much attention; and when it was so far advanced that correct information could be gained as to who was and who was not vaccinated, he thought that one great obstacle would be removed—the necessity of universal vaccination would be so much more apparent that the purpose of the Committee would be much facilitated.

On motion, it was voted that the Section recommend that the Committee be continued.

Dr. C. A. Lee introduced *leakage of gas pipes* as a subject well worthy of the consideration of the Section and of the Association.

On motion it was voted that Dr. J. C. Draper, of New York, be requested to prepare a report for the next session of the Association on the leakage of gas pipes.

Third Session, May 3.

ON ALCOHOL AND ITS RELATIONS TO MAN.

This paper on Alcohol and its Relations to Man, by Dr. Gerard F. Morgan, of Maryland, was presented and in part read by Dr. Dunbar, member of the special Committee with Dr. Morgan to present a report upon this subject.

After some discussion, it was, on motion, voted, that the report be presented by the Committee on the subject be referred to a new committee, to report at the next session.

Dr. Dunbar, of Maryland, Dr. T. Antisell, D.C., and Dr. N. S. Davis, Ill., were nominated, and the request referred to the Association.

Adjourned *sine die*.

SECTION ON SURGERY.

Dr. A. C. Post in the Chair; Dr. J. H. Burge, Secretary.

First Session, May 1.

At a meeting of the Surgical Section of the American Medical Association, held at the Dental College, corner of Hanover and Lombard streets, Baltimore, Md., May 1, 1866, at 3 o'clock P.M., Dr. Alfred C. Post, of New York, was elected Chairman, and Dr. J. H. Hobart Burge, Secretary.

There being no report of the papers which had been referred to this Section, a motion was made to adjourn, to meet again in the same place at 3 o'clock P.M., on Wednesday, 2d instant. Carried.

Second Session, May 2.

The Surgical Section met at 3 o'clock, pursuant to adjournment.

Dr. Post in the Chair.

Dr. J. S. Cohen, of Philadelphia, offered a paper by Dr. J. M. Boisnot of the same city, on Fracture of the Patella, and exhibited an apparatus for its treatment. On motion, the paper was referred to the Publication Committee.

Dr. J. S. Cohen read a paper on Vocal Paralysis, with Aphonia, cured by the application of stimuli and by the use of what he called vocal gymnastics. The paper was referred to the Publication Committee.

Dr. J. J. Woodward, U.S.A., chairman of Committee on Causes and Pathology of Pyæmia, presented a very elaborate paper. The Section listened for nearly an hour, when several members expressed their great interest in the communication, but owing to the shortness of the session it was voted to refer it at once to the Publication Committee, with the recommendation that it be published in full.

Dr. Woodward also presented some very beautiful photographs, illustrative of the success attained in micro-photography. In these specimens microscopes of very differing powers had been used.

Dr. A. C. Post, of New York, exhibited an original instrument for the bilateral operation of lithotomy.

Dr. J. C. Hutchinson, of Brooklyn, said he had used the instrument with satisfaction, and therefore moved that Dr. Post be requested to furnish a description for publication in the Transactions of this Association. Seconded and carried.

Dr. Post presented, also, a new instrument for making applications to the os uteri. It consists of a straight and rather slender pair of forceps, made short for convenience of carrying, but when in use elongated by a handle screwed thereupon. By a slide upon the forceps the blades are approximated and made to close firmly upon any object. The Doctor observed that it might be used either as a forceps to hold any substance which the operator might wish to apply, or to remove extraneous substances from the vagina.

Dr. Post also presented a small instrument to facilitate the introduction of insect pins for sutures; some of these pins being so delicate that without such guide they bend and become useless. The instrument consists of a sharp-pointed, slightly-curved, grooved needle—the groove being in its long axis. In

using, the needle is to be introduced to the very position which the pin is intended to occupy. The pin is then guided by the groove, carried to its place, and held there while the needle is withdrawn in the backward direction.

Dr. H. R. Storer, of Mass., presented an instrument which he called "The Clamp Shield," designed by him to lessen the dangers of extirpation of the uterus by abdominal section, and read a paper on the subject, which was referred to the Committee on Publication.

FOUR OPERATIONS FOR LITHOTOMY ON SAME PATIENT.

Dr. J. C. Hughes, of Iowa, reported a case of vesical calculi, in which he had four times performed the bilateral section in the same patient. When the second operation became necessary, lithotrity was attempted, but failed. At the time of the third operation the patient was much emaciated and very feeble, yet he recovered nicely. In less than another year the fourth operation was demanded, when twelve calculi were removed; drawings of these accompanying the papers. Dr. Hughes spoke highly of the bilateral as compared with the lateral operation, having performed it twenty-one times with the loss of but a single patient.

The paper was referred to Publication Committee.

Dr. Hughes also spoke of a new method of operating upon limbs which were both curved and shortened. He said Barton's mode was to saw out the V-shaped portion of the bone on its convexity; but as Dr. Hughes wished both to straighten and lengthen the limb, he cut down on the convex side, and passing a chain-saw around the bone, made a partial section on the side of its concavity, and then used such manual force as was necessary to straighten it—thus leaving a chasm to be filled instead of losing an additional inch.

It was moved by Dr. H. R. Storer, of Mass., that Dr. Hughes be requested to write a description of the operation for insertion in the Transactions of this Association.

On motion, the section adjourned to meet at 3 o'clock P.M., to-morrow, May 3d, in the same place.

Third Session, May 3.

The Section met at the appointed hour. Dr. Post in the chair.

Dr. Lewis A. Sayre, of New York, moved that Dr. Post be requested to furnish for the Transactions of the Association a description of his grooved needle, previously exhibited. Dr. Sayre thought the thanks of the profession were due to Dr.

Post for this unpretending but eminently useful instrument. Carried.

Dr. Sayre then read a paper on Luxation of the Femur into the Ischiatic Notch, of Nine Months' Standing, reduced by manipulation.

Referred to Publication Committee.

Dr. Dewit C. Enos, of Brooklyn, read a paper on the Intra-oral Method of operating for Removal of Lower Jaw.

Referred to Publication Committee.

Dr. George M. McGill, U.S.A., presented a paper advocating the adoption of a periosteum flap in all amputations in the continuity—including a report of five cases. The Dr. exhibited casts of two of the stumps after these operations, which were beautifully oval.

Paper referred to Publication Committee.

Dr. Enos thought the suggestion of Dr. McGill a good one, but in one case in which he had made a periosteal flap in his own practice there had been such a reproduction of bone as to necessitate a second operation.

Dr. Louis Elsberg, of New York, read a paper on the Means of Diagnosis at present available in Diseases of the Larynx, with full directions for the use of Laryngoscope.

On motion, referred to Publication Committee.

Dr. B. J. Raphael, of New York, stated that Dr. Montrose A. Polk, of ——, made a partial report in 1860, on ——, and moved that the committee be continued. Carried. On motion of Dr. Raphael, Dr. E. Krackowizer, of New York, and Dr. J. S. Cohen, of Philadelphia, were appointed a Committee to report on the subject of Local Anæsthesia. Dr. Post made some remarks on the subject of partial anæsthesia and the coöperation of the intelligent patient with the practitioner.

On motion of Dr. B. J. Raphael, Dr. Henry D. Noyes, of New York, was appointed a committee to report on the influence upon vision of the abnormal conditions of the muscular apparatus of the eye.

On motion of Dr. E. Krackowiser, of New York, Dr. Raphael was appointed a committee to report on the comparative merits of the different operations for the extraction of vesicular calculi.

Whereupon the Section adjourned *sine die.*

SECTION OF METEOROLOGY, MEDICAL TOPOGRAPHY, AND EPIDEMIC DISEASES.

The section was called to order at 3½ o'clock, P.M., May 1st, 1866. Dr. B. H. Catlin, of Conn., was chosen Chairman, and Dr. N. S. Davis, of Ill., Secretary.

A letter from Dr. R. C. Hamil, of Chicago, member of the Committee on Meteorology and Epidemics for the State of Illinois, was presented to the section, stating that important progress had been made in preparing a report, and asking for further time to complete it. On motion of the Secretary, Dr. Hamil was continued a member of the committee another year, and requested to report complete at the next annual meeting of the Association.

The following resolution was offered by the Secretary, and after some remarks on the importance of the several sections of the Association, and the necessity of their perfecting a more permanent and systematic organization, it was adopted as follows:—

Resolved, That the section on Meteorology, Medical Topography, and Epidemics, appoint a committee to prepare rules for the permanent organization of said section, with instructions to report at the opening of the section to-morrow.

Drs. N. S. Davis, of Illinois, and B. H. Catlin, of Conn., were appointed said committee.

On motion, the section adjourned to 3 o'clock, P.M., to-morrow.

Wednesday, May 2d, 1866.

The section was called to order at 3, P.M., Dr. B. H. Catlin, in the chair. The minutes of the meeting on the previous day were read and approved.

Dr. N. S. Davis, from the committee appointed to report rules for more efficiently organizing the section, reported as follows:—

By-Laws of the Section of Meteorology, Medical Topography, and Epidemics.

1st. The officers of the section shall consist of a President and Secretary, who shall continue their office one year, and until their successors are elected.

2d. The Secretary shall keep a fair record of the doings of the section, with an abstract of all discussions of papers and questions acted upon by the section, and report the same to the Association, or to the Permanent Secretary of the Association, within thirty days after the adjournment of each annual meeting.

3d. When any report, paper, or question is read to the section it shall be subject to a full discussion, but no member shall speak more than once on the same subject, until all others who wish to speak have been heard.

4th. Every report or paper referred to the section shall receive a sufficient examination, to determine fully its contents and merits, before it can be recommended for reference to the Committee of Publication. And whenever reports or papers are presented of such length and nature that the section cannot give them the necessary examination during the limited time of its annual sessions, it shall refer them to a sub-committee, with instructions to complete their examination, and report the result to the Permanent Secretary of the Association, within thirty days after the adjournment of the annual meeting.

5th. It shall be the duty of the section to select such topics for original investigation, and refer them to special committees, as will be best calculated to increase our knowledge of those departments of medical science placed in charge of the section.

On motion, the report of the committee was accepted, and the foregoing rules adopted unanimously.

The Secretary stated that a paper had been referred to the section for consideration, on the "Etiological and Pathological relations of Epidemic Erysipelas, Spotted Fever, or Cerebro-Spinal Meningitis, and Diphtheria," by Dr. N. S. Davis, of Chicago, Illinois.

The reading of the paper having been called for, it was read in full by the author. It was listened to with interest and attention; and the allusions in it to the etiology of epidemics generally, led to a very interesting discussion of the question, of how far *local meteorological and sanitary* conditions influence the origin and spread of epidemic cholera?

Dr. Woodward, of Fort Wayne, Indiana, said that sporadic cases of genuine spasmodic cholera occurred in his locality every summer. He stated that two cases came under his observation during the summer of 1865, presenting all the phenomena of true cholera, as perfectly as he had ever observed in the midst of an epidemic of that disease. He thought epidemics usually originated from an exaggeration of the same local influences that gave rise to sporadic cases, as suggested in the paper just read.

Dr. Worthington Hooker, of New Haven, Connecticut, stated that he had seen cases of real cholera during its epidemic prevalence, so perfectly disconnected from all other cases, that contagion or communication was not possible. He could attribute such cases to no other than local causes. He stated that there appeared to be three theories in relation to the origin and spread of cholera. The first was that which made it depend entirely on a specific poison of a contagious and portable charac-

ter. The second made the disease depend upon an infectious poison or miasm, capable of acting only when there are special local qualities of the atmosphere favorable for its action or increase. The third attributes its origin and spread exclusively to local meteorological and sanitary influences. His own convictions were, that in periods when the cholera prevails as an epidemic, certain unexplained telluric influences are added to local causes, which render the latter more active, and gives to the disease greater tendency to spread from place to place with some regularity.

Dr. Stockwell, of Michigan, gave an interesting account of the prevalence of epidemic cholera on one side of the St. Clair river, during the summer of 1854, in a limited district, while the other side of the river and surrounding places were exempt, though intercourse remained entirely unobstructed. In the district where the disease prevailed, the soil was level, and immediately underlaid with tenaceous clay, thereby preventing ready escape of the surface water, and exerting an influence on the electrical condition of the atmosphere. The soil on the other side of the river was sandy and porous, allowing of the most rapid percloration of water.

Dr. N. S. Davis, of Chicago, remarked that we were yet without the data necessary for determining with certainty either the origin or mode of spread of cholera. If we accept one series of facts, and confine our attention to them, we shall be led directly to the doctrine of contagion and portability. If we accept another series of facts, equally well established, we shall be just as certainly led to the conclusion that cholera arises from local causes. But if we examine critically the circumstances claimed as facts in either series, it will be found that a large proportion of them have been so imperfectly observed, or recorded in such careless general terms, that they are of very little value. He had participated actively in the study and treatment of five different epidemics of cholera, and so far as his own observations were concerned, they led him directly to the conviction that the disease neither travels from country to country, nor propagates itself by contagious virus, or infectious dejections. He mentioned many facts of interest, but claimed that he could not settle definitely the origin of epidemics until more systematic meteorological and sanitary records were kept from year to year, in connection with equally exact records of the prevalence and specific character of diseases. When this has been done long enough to cover the periodical return of two or three epidemics, we shall be able to command all the elements necessary

for a comparison, *etiologically*, of epidemic seasons, with those which precede and follow.

Then, and not until then, can we, with confidence, deduce such conclusions as should guide, both the profession and the municipal authorities, in the adoption of sanitary laws.

On motion of Dr. Wilson, the paper that had been read to the section, was referred to the Committee of Publication.

The following resolution was offered by Dr. Davis, and adopted, viz.:—

Resolved, that the secretary of this section be requested to enter into correspondence with the members of the Committee on Meteorology and Epidemics in the several States, and such other persons as he may think proper, for the purpose of establishing a uniform system of meteorological and sanitary records, embracing the thermometric, barometric, hygrometric, electric, and ozonic conditions of the atmosphere; the topography; and the sanitary conditions; in connection with a coincident record of the kind, special character, and extent of the prevalent diseases, at representative points throughout the whole country.

On motion the section adjourned.

N. S. Davis, Secretary.

SECTION ON PSYCHOLOGY.

May 2d.

The members of the Section on Psychology unite in the recommendation that the subject of insanity be again referred to a committee, for a report at the next meeting of this body, and that Dr. Isaac Ray, of the Butler Hospital for the insane, at Providence, R.I., be that committee, if the rules of the Association will allow of a committee of *one*, or, if the committee must be larger, that he be the chairman thereof.

Clement A. Walker, Chairman.

Committee on Insanity.—Drs. Isaac Ray, Rhode Island; Wilson Lockhart, Indiana; W. P. Jones, Tennessee; W. H. Stokes, Maryland; A. B. Cabaniss, Mississippi.

PROCEEDINGS OF THE MORGAN COUNTY MEDICAL SOCIETY.

The Morgan County Medical Society met in the Court House, Jacksonville, at 2 o'clock P.M., May 17, 1866, pursuant to adjournment, the President being in the Chair. The minutes of the previous meeting were read and approved.

The President announced the report of the Committee on the Constitution to be in order, which was, accordingly, read by the Secretary.

On motion, it was resolved to adopt each article separately. The several Articles of Section I. were adopted without eliciting debate, but Article I. of Section II., which reads as follows:—

"Any honorable member of the regular medical profession, who is not accredited in the community where he resides as Homœopathic, Hydropathic, Eclectic, &c., also, who is a graduate of a respectable school, or of ten years' reputable practice, but if an under-graduate, he must secure a certificate of attainment from the examining board. All gentlemen thus qualified participating in this organization, by signing this Constitution and paying a fee of one dollar to the Treasurer, shall become members."

On motion of Dr. Henry Jones, it was resolved to amend, by striking out "&c." after the word Eclectic. Dr. Reed objected to the word "accredited," and moved to amend by striking it out, which was seconded by Dr. Wilber, with the explanation that he did so to give Dr. Reed an opportunity to present his objection, and not because he objected to that word himself, for he should vote against its being stricken out.

Dr. Reed proceeded to explain his objection. Said he might be accredited in this community with being what he was not, a Homœopathist; that whereas he might have expressed his conviction that there was power in attenuated medicines in certain cases, that he did not receive or practice Homœopathy as a system. It was said, in reply to the Doctor, that if he desired the coöperation and assistance of his professional brethren to disabuse the public mind in reference to his being a Homœopathist, that they would cheerfully lend their aid, that he might not thus be accredited in this community.

As the Doctor signed the Constitution and became a member, it is understood by the Society that he does not accept Homœopathy as a system of practice. The motion to amend this clause being lost, it was accepted with the remaining Articles, without further debate.

The ceremony of signing the Constitution being over, the Society proceeded to the election of permanent officers.

On motion of Dr. Askew, it was resolved to dispense with the established form, by ballot, on the present occasion, for want of time.

Dr. Askew nominated Dr. McVey, of Waverly, for President the ensuing year, which being put to the Society by the Secretary was carried by a unanimous vote.

On motion of Dr. Stephenson, Dr. J. P. Johnson, of Lynnville, was elected Vice-President.

On motion of Dr. Edgar, Dr. Bibb was chosen Secretary by a unanimous vote.

Dr. J. Craig, of Arcadia, having been nominated for Treasuser, was elected by a unanimous vote.

The following gentlemen were elected as Examining Committee:—Drs. W. S. Edgar, D. Prince, Henry Jones, C. Fisher, and J. Askew.

It being ascertained that the Society was entitled to four delegates to the State Medical Association, the following gentlemen were elected by ballot to represent the Society the present year:—Drs. Henry Jones, Askew, Miller, of Waverly, and Bibb, of Jacksonville.

The President announced the next order of business to be the reading of an essay by Dr. Henry Jones on Asiatic Cholera. The Doctor having seated himself at the desk, commenced to read his manuscript at the forty-ninth page (fearing that there would not be time to read all.) He was listened to with marked attention and interest to the conclusion, nearly two hours.

On motion of Dr. Prince, it was resolved that Dr. Jones be solicited to furnish a copy of his dissertation to some medical journal for publication. The thanks of the Society were tendered to Dr. Jones, for his very able and instructive essay.

On motion of Dr. Edgar, it was resolved to make Asiatic Cholera the subject of general debate at the next meeting of the Society. Dr. Prince suggested that Dr. Edgar open that discussion.

The following gentlemen were elected honorary members of the Society:—Drs. J. T. Cassel, Samuel Adams, and Morrison,

of Jacksonville; W. B. Perry, of Berlin; James Layton, of Manchester; and Charles Chandler, of Chandlersville.

On motion, it was resolved that the next meeting of the Society should take place at 10 o'clock A.M., in this place, on the second Thursday in June, to which time the Society adjourned.

R. E. McVEY, M.D., *Pres't.*

G. R. BIBB, M.D., *Sec'y.*

SIXTEENTH ANNIVERSARY MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY.

DECATUR, JUNE 5, AND 6, 1866.

The regular Annual Meeting of the Illinois State Medical Society assembled in Powers' Hall, Decatur, June 5th, at 9½ o'clock A.M. The President, Dr. J. M. STEELE, of Grandview, called the Society to order, and the Rev. D. C. MARQUIS, opened the exercises by prayer.

Dr. E. W. MOORE, Chairman of the Committee of Arrangements, welcomed the Delegates to the hospitalities of the City of Decatur; and reported as present the following members:—

Drs. J. H. Hollister, J. S. Jewell, E. L. Holmes, J. W. Freer, N. F. Quales, Ira Hatch, T. D. Fitch, and S. A. McWilliams, of Chicago, Cook Co.

Drs. T. F. Worrell, D. L. Crist, C. R. Parke, John Little, S. W. Noble, and D. O. Crist, of Bloomington, McLean Co.

Drs. J. A. Heckelman, Alex. McBride, S. McBride, S. T. Trowbridge, B. A. Allison, J. A. W. Hostetter, O. F. Parker, Ira N. Barnes, E. W. Moore, and J. Brown, of Decatur, Macon Co.

Drs. Daniel Stahl, Louis Watson, Joseph Robbins, W. M. Landon, of Quincy, Adams Co.

Drs. Geo. T. Allen, P. J. Wardner, and A. A. Patterson, of Springfield, and W. H. Veatch, of Pawnee, Sangamon Co.

Drs. Geo. R. Bibb, David Prince, of Jacksonville, and R. E. McVey, of Waverly, Morgan Co.

Dr. E. W. Mills, of Sullivan, Moultre Co.

Drs. J. H. Tyler, B. K. Shurtleff, R. T. Richards, and W. W. Adams, of Clinton, DeWitt Co.

Dr. H. Noble, of Heyworth, McLean Co.
" N. Wright, of Chatham, Sangamon Co.
" Geo. W. Albin, of Neoga, Cumberland Co.
" F. B. Haller, of Vandalia, Fayette Co.
" J. M. Steele, of Grandview, Edgar Co.
" L. T. Hewins, of Loda, Iroquois Co.
" S. P. Breed, of Princeton, Bureau Co.
" W. M. Chambers, of Charleston, Coles Co.
" John Wright, of Clinton Institute of Medicine.
" J. O. Hamilton, of Jerseyville, Jersey Co.

The following were then proposed and duly elected permanent members:—

Drs. J. M. Harwood; W. E. Wilson; B. A. Allison; Charles N. Denison; W. B. Hostetter; O. F. Parker; J. A. Heckelman; and W. H. Walters, of Decatur, Macon Co.

Drs. P. H. Bailhache; H. C. Barrell; B. M. Griffith; and H. H. Roman, of Springfield, Sangamon Co.

Dr. J. N. Ralston, of Quincy, Adams Co.
" C. Gorham, of York,
" W. M. Wilcox, of Matoon,
" S. B. McGlumphy, of Lincoln,
" D. T. Kyner, of Macon,
" J. P. Taggert, of Cairo,
" C. J. Gill, of Bloomington,
" J. A. Ward, of Livingston,
" N. G. Blalock, of Mount Zion, Macon Co.

A letter from Dr. N. S. Davis, Permanent-Secretary, was read, stating that he was unable to attend the present Annual Meeting, on account of severe sickness.

On motion, Dr. S. A. McWilliams, of Chicago, was appointed Secretary *pro tem.*

The following committee of one from each County represented, was appointed to nominate the Officers, and fill the Standing Committees, for the ensuing year, viz.:—

Dr. H. Noble, of McLean Co.
" Louis Watson, of Adams Co.
" S. P. Breed, of Bureau Co.
" J. W. Freer, of Cook Co.
" W. M. Chambers, of Coles Co.
" G. W. Albin, of Cumberland Co.
" J. H. Tyler, of DeWitt Co.
" J. M. Steele, of Edgar Co.
" F. B. Haller, of Fayette Co.
" L. T. Hewins, of Iroquois Co.
" S. T. Trowbridge, of Macon Co.
" R. E. McVey, of Morgan Co.
" N. Wright, of Sangamon Co.
" S. B. McGlumphy, of Logan Co.

The Committee retired, and after a brief consultation reported the following nominations:—

For President—Dr. F. B. Haller, of Vandalia,
Vice-President—Dr. L. T. Hewins, of Loda,
2d Vice-President—Dr. N. Wright, of Chatham,
Treasurer—Dr. J. H. Hollister, of Chicago.

On motion, the report of the Committee was accepted, and the candidates nominated unanimously elected.

Drs. W. M. Chambers and H. Noble were appointed a committee to conduct the officers just elected to their places.

Dr. J. M. Steele, the retiring President, thanked the Society for its uniform kindness and support, and retired with the cordial good wishes of every member.

Dr. F. B. Haller, the President elect, was then introduced, and, after a brief and appropriate address, entered upon the discharge of his official duties.

A communication from the Adams County Medical Society was presented and read, making certain charges against Dr. Addison Niles, of Quincy.

After some discussion, the following resolution, offered by Dr. T. F. Worrell, of Bloomington, was adopted, viz.:—

Resolved, That a committee be appointed, who shall prefer charges against Dr. Addison Niles, based on the representations

made by the Adams County Medical Society, and shall furnish him with a copy of such charges, with notice to appear before this Society, at it next regular Annual Meeting.

Drs. T. F. Worrell, of Bloomington, J. Brown, of Decatur, and H. Noble, of Heyworth, were appointed such committee.

The following Report of the PermanentSecretary and Publishing Committee was then read:—

REPORT OF THE PERMANENT SECRETARY AND COMMITTEE OF PUBLICATION, FOR 1866.

In accordance with the Constitution, which provides that the State Medical Society shall hold its Annual Meeting on the first Tuesday in June, whenever the American Medical Association meets on the first Tuesday in May, the Permanent-Secretary gave early notice, in both the Medical Journals published in the State, that the present Meeting would be held at Decatur, on the first Tuesday in June. Also, that, in consequence, the Delegates appointed to attend the American Medical Association in Boston, last year, must also fill the same appointment at Baltimore, this year, as there would be no opportunity to appoint their successors. He furnished each Delegate new credentials for that purpose.

In accordance with the directions of the State Society, at its last Annual Meeting, the Committee of Publication put the Transactions of the last year to press early, and as usual printed 300 copies; also, separately, 500 copies of the Constitution, By-Laws, and Code of Ethics.

Although the whole expense of type-setting for the Transactions was avoided by first publishing the matter in the *Examiner*, yet the printer's bill, for the present year, is as follows:—

300 Copies of Transactions for 1865, ----------	$195,49
500 do of Constitution, By-Laws, etc., ----	57,00
Total, ----------	$252,49

The amount paid on this bill and the balance unpaid, will be shown by the Report of the Treasurer.

Of the 300 copies of Transactions, about 40 were required to supply Members of the Society, about 20 have been sent to the

various Medical Periodicals, leaving about 240 copies on hand. About the same proportion of those published each year, since the undersigned has been Secretary, are still left to encumber the shelves of his office. In consequence of the very small number of copies of Transactions either paid for or read by the Members of the State Society, and the constant indebtedness of the Treasury, we would respectfully suggest that, in future, the Committee of Publication be instructed to publish the Proceedings of the Society in the *Chicago Medical Examiner*, and issue extra copies to the number only just sufficient to supply such Members of the Society as have paid their dues before the 1st of August. The *Chicago Medical Journal* might also publish so much of the Proceedings as its Editors might choose. By this course, the Society would soon be out of debt, and receive all the real benefits that have ever been obtained by the publication of their Proceedings.

All of which is submitted.

N. S. DAVIS,
Permanent-Secretary.

After having been read, the Report was referred to a Special Committee, consisting of Drs. S. W. Noble, W. M. Chambers, and T. F. Worrell.

The report of Dr. J. H. Hollister, as Treasurer, was read and referred to an auditing committee.

The Treasurer also reported, that in accordance with the instructions of the Society, he had caused to be prepared a book, in which to preserve the constitution, by-laws, list of officers and members, and the Treasurer's accounts.

The Society then adjourned until 2 o'clock P.M.

AFTERNOON SESSION.

The Society was called to order at 2 o'clock P.M., Dr. F. B. Haller, President, in the Chair.

Dr. H. Noble, Chairman of the Committee on Practical Medicine, presented his report, with an accompanying paper from Dr. F. B. Haller. After reading, the report and accompanying paper were referred to the Committee of Publication.

Dr. E. L. Holmes, Committee on Ophthalmology, presented

and read his annual report, which was accepted and referred to the Committee of Publication.

On motion, it was resolved that the annual assessment on each member for the present year be *three dollars.*

The Committee to whom had been referred the Annual Report of the Permanent-Secretary, made the following report:—

Your Committee, to whom was referred the report of Dr. N. S. DAVIS, would respectfully report that, in our opinion, the publication of the proceedings of this Society in either of the medical journals would be inexpedient.

We, therefore recommend, that the proceedings be published in pamphlet form, and that there be but one hundred copies published.

We further recommend that the Committee of Publication have the privilege of first publishing the proceedings in the MEDICAL EXAMINER, to save expense—provided there is not money enough in the treasury to pay for the immediate publication.

We likewise recommend, that the annual assessment be three dollars, and that the Treasurer correspond with every delinquent member, explaining his manner of keeping the records, and urging them in the strongest manner possible to keep themselves good on the books.

All of which is very respectfully submitted.

S. W. NOBLE,
W. M. CHAMBERS,
T. F. WORRELL.

After considerable discussion, on motion of Dr. D. PRINCE, the report of the Committee was laid on the table.

Dr. D. PRINCE proposed, as an amendment to the clause of the constitution relating to permanent members, that the words "but without the right of voting," be stricken out. Proposition lies over one year, under the rule.

On motion, the Society adjourned until 8 o'clock P.M.

EVENING SESSION.

At 8 o'clock P.M., the Hall was well filled with a popular

audience, to hear an address from Dr. GEO. T. ALLEN, of Springfield. The President called the meeting to order, and the speaker was introduced by Dr. E. W. MOORE, Chairman of the Committee of Arrangements.

The address of Dr. Allen was listened to with much pleasure and profit. At its close, the Society adjourned until 9 A.M. of Wednesday.

WEDNESDAY, SECOND DAY.

The Society met at 9 o'clock A.M., the President, Dr. HALLER, in the Chair.

The minutes of the previous day's proceedings were read by the Secretary and approved.

On motion of Dr. J. BROWN, the Society tendered a vote of thanks to Dr. Allen for his public address last evening.

Dr. J. H. HOLLISTER presented and read a paper on Bromine and its compounds, as remedial agents, and the pathological conditions indicating their use. The paper elicited some discussion, and was referred to the Committee of Publication.

Dr. J. S. JEWELL presented and read a full and carefully prepared report on Cerebro-Spinal Meningitis, which was listened to with close attention, and referred to the Committee of Publication.

On motion, the Society adjourned to 1½ o'clock P.M.

AFTERNOON SESSION.

The meeting was called to order at 1½ o'clock P.M., the President, Dr. HALLER, in the Chair.

The Secretary read a paper on Spotted Fever, by Dr. F. R. RAYNE, of Marshall, which was referred to the Committee of Publication.

Drs. Worrell and Brown, from the committee appointed to prefer charges against Dr. Addison Niles, of Quincy, reported as follows:—

"The undersigned having been appointed a committee to prefer charges against Dr. Addison Niles, of Quincy, a member of this Society, respectfully submit the following report:—

"That we charge Dr. Niles with having violated the Code of

Ethics, by representing the 'Quincy Medical Society,' which we consider irregular, being composed, in part, of members who had been expelled from the Adams County Medical Society.

T. F. WORRELL,
J. BROWN."

The report was accepted, and the Secretary instructed to furnish Dr. Niles with a copy, and request him to answer to the same in person at the next annual meeting of the State Medical Society.

Dr. H. NOBLE, Chairman of the Committee on Nominations, made the following report:—

For Place of Next Annual Meeting.—SPRINGFIELD.

For Assistant-Secretary.—Dr. P. H. Bailhache, of Springfield.

Committee of Arrangements.—Drs. N. Wright, of Chatham; B. M. Griffith, H. B. Buck, J. Townsend, and Wm. Jayne, of Springfield.

Committee on Practical Medicine.—Drs. J. Adams Allen, of Chicago; R. E. McVey, of Waverly; and L. T. Hewins, of Loda.

Committee on Surgery.—Drs. H. W. Davis, of Paris; C. R. Parke, of Bloomington; and G. R. Bibb, of Jacksonville.

Committee on Obstetrics.—Drs. DeLaskie Miller, of Chicago; N. Wright, of Chatham; and J. N. Ralston, of Quincy.

Committee on Drugs and Medicines.—Drs. P. H. Bailhache, of Springfield; N. T. Quales, of Chicago; and J. Miner, of Waverly.

Committee on Ophthalmology.—Dr. E. L. Holmes, of Chicago.

Committee on Curvatures of Spine and Hip Disease.—Drs. J. W. Freer and R. G. Bogue, of Chicago.

Committee on Plastic Surgery.—Dr. David Prince, of Jacksonville.

Committee on the Co-Relation between Electricity and Nervous Force.—Dr. D. T. Kyner, of Macon.

On motion, the report of the Nominating Committee was accepted, and its recommendations adopted.

On motion of Dr. T. D. FITCH, a committee of three was

appointed, to report at the next annual meeting, on "Specialties and Medical Advertising."

The President appointed Drs. T. D. Fitch, N. S. Davis, and D. Prince, to act as such committee.

A paper on the use of Bromide of Ammonium in the Treatment of Epilepsy, by Dr. Ira Hatch, of Chicago, was read by Dr. Hollister, and referred to the Committee of Publication.

Dr. D. Prince proposed the following amendment to the constitution:—

"*Art. 3d—Meetings.*

"The Annual Meetings of this Society shall be held on the *Third* Tuesday in May of each year."

On motion, the following members were duly elected Delegates to the next Annual Meeting of the American Medical Association:—

Dr. F. B. Haller, of Vandalia,
" David Prince, of Jacksonville,
" J. H. Hollister, of Chicago,
" Louis Watson, of Quincy,
" H. Noble, of Heyworth,
" T. F. Worrell, of Bloomington,
" S. T. Trowbridge, of Decatur,
" John Wright, of Clinton,
" P. J. Wardner, of Springfield,
" D. L. Crist, of Bloomington,
" J. M. Steele, of Grandview,
" J. A. W. Hostetter, of Decatur,
" L. T. Hewins, of Loda,
" G. W. Albin, of Neoga,
" Wm. M. Chambers, of Charleston,
" C. Goodbrake, of Clinton,
" S. W. Noble, of Bloomington,
" Samuel McBride, of Decatur,
" James Miner, of Waverly,
" J. Brown, of Decatur,
" Geo. T. Allen, of Springfield,
" R. T. Richards, of Santa Anna,

Dr. J. Robbins, of Quincy,
" R. E. McVey, of Waverly,
" W. E. Wilson, of Decatur.

On motion of Dr. Hollister, each delegate was authorized to appoint a substitute, in case of his own inability to attend.

Dr. Clarke, of Illiopolis, exhibited an interesting specimen of monstrosity.

Dr. S. P. Breed, of Princeton, exhibited a uterine polypus, with a verbal history of the case; for which he received the thanks of the Society.

Dr. E. W. Moore, Chairman of the Committee of Arrangements, presented a list of volunteer papers.

Dr. C. R. Parke, of Bloomington, read the report of a case of death from the inhalation of chloroform; which, after an interesting discussion, was referred to the Committee of Publication.

Dr. S. T. Trowbridge, of Decatur, presented a communication in the form of a law to be enacted by the State Legislature, designed to secure a higher grade of qualifications for practising physicians in this State.

On motion of Dr. Stahl, of Quincy, the paper of Dr. Trowbridge was referred to the following Committee:—

Drs. S. T. Trowbridge, Geo. T. Allen, P. H. Bailhache, H. Noble, and David Prince; and the same instructed to prepare suitable measures of legislation, and to urge their passage by the next Legislature.

Dr. N. Wright, of Chatham, read a paper on Cholera, which was referred to the Committee of Publication.

Dr. Veatch presented a paper on Malarial Fever, which was referred to the Committee of Publication.

Dr. Geo. T. Allen, of Springfield, was appointed a Special Committee to report on the *Radical Cure of Reducible Hernia.*

Dr. W. M. Chambers, of Charleston, was appointed a Special Committee to report on Syphilis.

On motion of Dr. S. W. Noble, it was resolved that, at the next Annual Meeting, all volunteer papers be handed to the Chairman of the Committee of Arrangements, at the commencement of the meeting.

On motion of Dr. HOLLISTER, a vote of thanks was unanimously tendered to the Committee of Arrangements, and to the Physicians of Decatur, for the very judicious and hospitable manner in which they had received and entertained the Society at its present meeting.

On motion, the Society adjourned *sine die.*

The number in attendance at the present meeting was larger than at any previous meeting since the organization of the Society. S. A. McWILLIAMS, *See'y pro tem.*

The Clinique.

CLINICAL CASES IN THE MEDICAL WARDS OF MERCY HOSPITAL, JUNE 5TH, 1866.

BY N. S. DAVIS, M.D., Prof. Practical and Clinical Medicine, Chicago Medical College.

CASE I. *Chronic Ague; Enlargement of Spleen; Cough.*—This patient is a boy, aged about 16 years, who was admitted to the Hospital about three weeks since. Those members of the hospital class who were in attendance at that time will remember examining him carefully, soon after his admission. His skin was bloodless; lips, tongue, and gums pale, indicating a decidedly spanæmic or impoverished condition of the blood, especially in reference to the red corpuscles; pulse soft, and nearly natural in frequency; appetite impaired; and he complained of a harsh cough, with some soreness in the chest; and great muscular debility. He had suffered paroxysms of intermittent fever, at irregular intervals, for several weeks. You will also remember, that a physical exploration by auscultation, percussion, and palpation, revealed a mixture of dry and moist rhonchi in both sides of the chest, and extensive dulness over the left hypochondriac region, extending from the seventh rib to near the anterior part of the crest of the ilium; the first, indicating chronic bronchitis, and the latter, a decided enlarge-

ment of the spleen. The pathological conditions then presented by the patient were, impaired tonicity of the organized structures with that impoverishment of the blood which usually results from chronic ague, complicated with a low grade of inflammation in the bronchial mucous membrane, and enlargement and induration of the spleen. To meet the indications for treatment afforded by the general impairment of tonicity, and irregular paroxysms of ague, the patient was directed to take three grains of sulphate of quinine after breakfast and dinner each day. For the bronchial irritation and enlargement of the spleen, he was directed to take a teaspoonful of the following mixture before each mealtime and at bedtime:—

℞. Muriate of Ammonia,---------- ℥iij.
Tart. Ant. et Pot.,---------- gr.ij.
Sulph. Morph., ---------- gr.iij.
Syrup of Liquorice,---------- ℥iv.
Mix.

The muriate of ammonia in the mixture was represented as a valuable alterative, well calculated to promote absorption of the adventitious deposits or exudations into the spleen, without any of the objectionable properties possessed by the preparations of mercury; while the small doses of antimony and morphine would lessen both the irritability and vascularity of the bronchial mucous membrane. He followed the foregoing treatment for one week, with a constant improvement in all his symptoms. The quinine was then limited to one dose after breakfast each morning, and the muriate of ammonia mixture continued four times a-day as before. At the end of the second week, his cough was entirely removed, and his strength, color, and appetite so much improved that he ceased to present himself for further advice until to-day.

You see, now, his general aspect very much changed. His prolabia are red; the veins of the surface moderately full; and his flesh increased. He has had no cough, appetite good, and bowels regular; but during the last few days he has complained of several attacks of pain in the epigastrium, apparently of a neuralgic character. We say neuralgic, because they were

accompanied neither by fever, loss of appetite, or flatulency. By re-examining the epigastric and left hypochondriac regions at this time, you find nothing unnatural in the epigastric region proper, but dulness still exists over too large a portion of the hypochondrium. And by placing the patient in the dorsal position, with thighs flexed upon the pelvis so as to relax the abdominal muscles, the fingers pushed a little deeply under the margin of the ribs on the left side readily feels the rounded hard margin of the spleen; thus showing that it is still larger and harder than natural. The enlargement is very much less than when admitted into the hospital, three weeks since, but still sufficient to impair the functions of that organ, and, indirectly, that of the stomach also. It is quite probable that the paroxysms of epigastric pain, of which he complains, have originated from taking food more freely than the digestive organs could digest perfectly. The leading indications for treatment at present are, to improve the functions of the stomach and still further reduce the enlargement of the spleen. To fulfil these indications, we will give the patient one of the following pills before each mealtime and at bedtime:—

℞. Ext. Hyoscyamus, ---------- 40 grs.
Ext. Taraxacum, ---------- 40 grs.
Sulph. Ferri,---------- 20 grs.
Pillulæ Hydrarg.,---------- 20 grs.

Mix, and divide into 40 pills.

The hyoscyamus and iron are designed to improve the sensibility and secretory action of the stomach, while the taraxacum and blue mass will continue such alterative action as will further reduce the enlargement of the spleen. The food of the patient should be plain, easily digested, and taken in very moderate quantities at a time.

CASE II. Mr. B., aged 35 years, a native of Ireland, was admitted into the hospital eight days since. He is addicted to the excessive use of alcoholic stimulants, and was exhibiting the initial symptoms of delirium tremens at the time of admission into the hospital. His mind was despondent and apprehensive; frequent startings; insomnia; and loss of appetite.

To control these symptoms, he took the tincture of Cannabis Indica, in doses of 20 drops, every four hours, and small quantities of beef-tea at suitable intervals. Under this treatment the nervous symptoms so far subsided that the patient slept well, recovered a moderate appetite, and lost all that starting and apprehensive state of mind characteristic of ordinary delirium tremens. Still, a week has elapsed since the amount of improvement just stated, and the patient instead of being up ready for a discharge, as is usual in most cases of this kind, is here in bed, presenting a train of obscure symptoms which require the most careful attention of the physician. The mind presents a degree of torpor or vacuity, and a forgetfulness that often causes him to give erroneous answers to questions, and sometimes to exhibit slight wandering for a few minutes at a time. The skin is cool and relaxed, but the pulse constantly up to 100 per minute; the tongue moist, pointed, and tremulous; little or no appetite; and though complaining of no pain in the abdomen, yet pressure on the epigastrium causes a frown that indicates plainly some tenderness. The fæcal and urinary secretions are nearly natural.

The symptoms now presented by the patient indicate the existence of a grade of irritation in the gastric mucous membrane, such as causes passive congestion of the capillaries and suspension of the secretion of gastric juice, and, therefore, loss of appetite. The brain, which had suffered derangement both in its nutrition and sensibility during the period of excessive use of alcoholic stimulants, cannot readily regain its natural condition and steadiness of function, while the stomach fails to replenish the blood with the products of healthy digestion. You thus see not only a clear explanation of the symptoms at present existing, but also the further dangers to which the patient is exposed. The continuance of the impaired condition of the brain makes the patient constantly liable to, at least, temporary mental hallucinations, under the influence of which he might do injury to himself or others, and thereby make himself subject to accusations of crime by the majority of those around him. On the other hand, a continuance of the morbid

condition of the gastric mucous membrane would lead either to softening of its texture, or chronic follicular inflammation. To obviate these tendencies and restore the patient to health, we must adopt such treatment as will allay the morbid condition of the stomach, and thereby renew the processes of digestion and assimilation. This will result in furnishing the brain with the restorative influence of nutritious and healthy blood, and its functions will soon become steady and normal. There are several formulæ well adapted to accomplish this result, so far as medicine is needed. The following are such as I have frequently used with benefit:—

℞. Nitras Argenti,---------- 10 grs.
Ext. Hyoscyamus,---------- 30 grs.

Mix, and divide into 30 pills, one of which should be given before each mealtime and at bedtime.

℞. Oxide of Zinc,---------- 30 grs.
Lupulin,---------- 20 grs.

Mix, and divide into 12 powders, one of which may be given before breakfast, dinner, and at bedtime.

℞. Sub. Nit. Bismuth,---------- ʒj.
Lupulin,---------- 18 grs.

Mix, and divide into 12 powders, one of which may be taken before each meal, and at bedtime.

For the patient before us, we shall direct the pills mentioned in the first of these prescriptions, to be given, one each morning, noon, teatime, and bedtime. He should be induced, also, to take a moderate amount of plain nourishment, such as milk, rice, beef-tea, etc., at each mealtime.

The results of this treatment, you will learn at a future clinic hour.

NOTE.—After using the remedies and diet indicated above eight or ten days, the patient had recovered a moderate appetite, a cheerful expression of mind and countenance, but his muscular strength improved very slowly. The nitrate of silver was then discontinued, and strychnine, in doses of one-twentieth of a grain substituted in its place, under which his recovery was slowly completed.

Selections.

ON ETHER AS A LOCAL APPLICATION.

By JOHN J. BLACK, M.D., of Philadelphia.

Our attention was drawn to this subject by an article in the Quarterly Summary of the number of this Journal for October 1864, p. 523, on the "Pathology and Treatment of Aphthæ." The author of that article, Dr. Jules Worms, whose paper originally appeared in the *Gazette Hebdomadaire*, concluded from a minute examination of the deposit on the surface of aphthæ, that it consisted of a fatty matter which is not to be found in any other disease of the mouth, and he inferred from the solubility of the exudation in ether, that this article might prove a useful remedy for the affection. Accordingly he resorted to the application, and with the most beneficial results. This remedial agent removes, he states, "the yellowish secretion, a new epithelium promptly forms, and no trace of the superficial ulcers remains beyond slightly increased vascularity of the mucous membranes."

Prompted by this statement, I determined to give the remedy an extended trial, and I shall now endeavor to show, by the results, that ether locally applied is a most efficient remedy not only in aphthous ulcers but also in most of the other diseases of the mucous membrane of the mouth and adjacent parts, in which, according to the researches of Dr. Worms, the deposits are of a non-fatty nature.

Aphthæ.—We have used the application in several cases of this disease, and invariably found the affection to yield after a few applications, daily repeated. A camel's-hair brush was dipped in ether an applied freely over the parts; it appeared to smart a little at first, but great relief soon followed. This was certainly marked both in character and point of time, in comparison with that obtained by borax and similar preparations.

"*Thrush.*"—In this disease above all others we have been pleased with the results of the application. The cases presented themselves in the obstetrical wards of the Philadelphia Hospital, Blockley, which of course were fruitful in that disease—containing so many badly nourished children. It was applied directly to the parts, as in aphthæ, with a camel's-hair brush.

At first it produced or seemed to produce a slight difficulty in inspiration, which was soon relieved by a hearty cry of the infant. Of course its presence in the mouth could not have been pleasant, but in no case was it followed by an unpleasant symptom. The deposit was not immediately dissolved, but seemed to disappear gradually, and in most cases after twenty-four hours there was none whatever to be seen, and the one application completed the cure (at least the local cure). In other cases a few spots remained, and if they persisted after another twenty-four hours we repeated the application, and in every instance a cure resulted. These cases were all carefully watched, some of them for several months, and in no case was there the slightest return of the complaint. In from three to four days the mucous membranes became perfectly normal; in the interval from the disappearance of the deposit to this time it presented something of the appearance of erythematous stomatitis without the usual dryness attendant on that affection. Between twenty and thirty cases were treated in this manner, and after the disappearance of the thrush they improved wonderfully. These results tend to strengthen the idea that thrush is a local disease confined to the mouth, or at least that this part only causes inconvenience, and the constitutional troubles as it were radiate from that centre.

"*Ulcero-Membranous Stomatitis.*"—In this disease we have had the opportunity of testing it in three cases. One supervening upon pleurisy died with extensive sloughing of the parts of the jaw involved. Another recovered without any serious trouble, and seemed to have been greatly benefited by the ether. The third case, more serious, also recovered. Here the parts were apparently in a gangrenous condition, and it only differed from true gangrene of the mouth in commencing in, and being more particularly confined to, the gums, without seriously involving the cheek. The sloughs were kept well detached, the parts washed with diluted chlorinated soda, and the ether applied thoroughly morning and evening. A change for the better soon came over the parts, and the patient recovered with the loss of a portion of the alveolar border of the jaw. Of course we combined with this treatment tonics and stimulants to the fullest extent.

to cleanse the teeth, gums, and tongue from sordes, and such accumulations in low fevers, and might possibly produce a permanent change for the better in the secreting apparatus there situated.

There is another trouble in which ether must prove a very

valuable remedy, although we have not had the opportunity of testing it. We refer to "herpes præputialis," that annoying and troublesome complaint with which some persons are so much afflicted. It would also possibly prove efficacious in many skin affections, such as eczema, psoriasis, etc., the crusts having first been removed with a poultice.

According to Prof. Wood, ether has been locally applied to neuralgic pains, earache, superficial burns and scalds, and also to aid in the reduction of strangulated hernia; but in all these cases the cuticle was entire. There are doubtless many other conditions in which ether might be beneficially applied as a local agent, and which will doubtless suggest themselves in practice. There is, however, one more condition in which we must refer to its beneficial action, viz., chronic ulcers. We have not had the opportunity recently of observing it in those troublesome lesions, and here beg leave to express our thanks for the following observations made in the surgical wards of the Philadelphia Hospital, Blockley, by our friend Dr. Charles E. Smith, Jr., resident physician in that institution.

"At the suggestion of Dr. J. Black I tried the effects of ether as an application to chronic ulcers in the surgical wards of the Philadelphia Hospital, Blockley. For the first trial I selected ten cases, the ulcers being on the legs, and from one to twelve years' standing; some of them being partially healed during that time, and had reopened. In seven of these ten cases the sores were covered with a dirty yellowish-white exudation, looking as though melted tallow had been poured over them; two were indolent in character with thickened and everted edges; one was in a sloughing condition. The seven first mentioned healed up rapidly in from two to four weeks, leaving a *very* small cicatrix. The indolent ones improved for a time under the use of the ether, but soon ceased to respond, other remedies seeming to finish what it began. The sloughing one remained as it was, the application seeming to have no effect. The patient died of scurvy. After this I tried it upon three more cases in which the tallow exudation was well marked, with the most satisfactory results, they having healed within three weeks. The ether was applied with a camel's-hair pencil, about one drachm painted on every morning like varnish, nothing else

The question here arises whether ether might not act beneficially locally applied to true gangrene?

In acute pharyngitis, the sore throat every day met with, we have found it one of the very best applications, in all its stages. We apply it with a camel's-hair brush; at first it stings for a

minute or two, and then a pleasant coolness is experienced in the part, giving most marked relief, and patients almost invariably express themselves as feeling greatly benefited. The most noticeable feature in these cases is, the rapid subsidence of the swelling and tumefaction of the parts, and which the patient never fail to notice. In chronic pharyngitis also it produces the same marked relief, and in specific and non-specific ulcerations of the throat, where the patient is much troubled by the accumulations of mucous and the other secretions, we have found the best plan of treatment to consist in washing out the throat well with a mop dipped in a strong alkaline solution, which dissipates the mucus, etc., and then applying ether to the parts. In chronic laryngitis we have seen benefit derived from inhaling ether, not of course up to the production of anæsthesia. Here an attempt at its local application proves decidedly irritating.

In diphtheria we have not yet had the opportunity of testing the remedy, but this is the disease in which we have always expected to derive the greatest benefit from it. While we do not consider the mere throat manifestations as the sum and substance of diphtheria, nevertheless it is rational to suppose that these exudations, when swallowed, must tend to poison the system anew, and set up exhausting diarrhœas, etc., and looking at them in this light, it is certainly of the greatest importance to get rid of them. It is also, perhaps, of not less importance to get rid of the mechanical impediment which they offer to the breathing, and also of the swelling, which is so often a serious matter. As before stated, we have not had the opportunity of testing it in this disease, but my friend, Dr. D. F. Woods, of this city, has kindly reported to me a case in which he used it, and in which he derived from it all the benefits before mentioned. He said it appeared to disperse the membrane, reduced the swelling, and altogether placed the patient in a more comfortable condition. Dr. Woods also reported to me that he had used it often in the ordinary pharyngitis, tonsillitis, etc., frequently combining nitrate of silver with it, and always with the most marked and decided benefit, surpassing in his estimation all other remedies.

It strikes me at the moment that ether might also be useful being done for them, except supporting the leg with a bandage. They improved from the first application, granulations of a healthy character sprung up almost immediately, and the ulcers healed rapidly, leaving a very slight cicatrix. In one case in particular in which the ulcers had existed for three years, the

skin for several inches around them being of a dirty brown color, healed as though by magic, and at the end of a month the coloration had almost entirely disappeared. These experiments have lead me to the conclusion that in chronic ulcers, in which there is an exudation over the surface looking like a false membrane, the ether causes it to disappear and granulations to spring up, the ulcers healing much sooner than by any other means. In indolent ulcers with raised edges it acts very well for a time as a stimulant, but sooner commences to lose its power. I think the ether acts more decidedly during hot than during cold weather, the ulcers then appearing to respond to it with more certainty."

The ether used in all the foregoing cases was the sulphuric ether, the "Æther," U.S.P.

In regard to the manner in which ether locally applied produces its results, we remark, in the first place, that it is a local stimulus, and appears thoroughly searching and penetrating in its action. Thus then it increases absorption, prevents or dispels congestion, and allows free osmotic action. Again, very probably it changes the nature of the local cell action, which having been turned from its normal channel may thus be driven back to its course. Again, it undoubtedly acts to a great extent chemically. It has been shown by Rokitansky and others that most of these exudative inflammations contain fat, both the mucoid exudative and the fibrinous exudative, the one running into the other, except it be checked. Now the well-known solvent power of ether over fats shows us then that it must act beneficially through its chemical properties. Other chemical changes it doubtless brings about, but of their true nature we are at present unable to determine.

Such then are the results obtained from our short experience in the application of ether as a local remedy, that it is available for much more extended usefulness, we have little doubt; as such then when we commend it to the profession, with the full assurance that it will prove a valuable accession to the aramentarium of the physician.

N.B.—It is well to bear in mind when using ether in any manner that great caution must always be observed to prevent the near approach of flame or heat to it, for by neglecting this point serious accidents may arise.

On Dilitation of the Os Uteri during Labor by Incisions.—Dr. Hilderbrandt, of Konigsburg.—The author commences by a brief account of nine labors, in seven of which

primiparæ, advanced in life, suffered from rigidity of the os uteri; against which ipecacuanha, opium, poultices, baths, bleedings, and chloroform were all unavailing.

Incisions were made, after which all the cases were fortunately terminated.

Incisions were also made, with a like favorable result, in one case of convulsions, and one in prolapsus of the cord. He proceeds to consider the proposed risks that have deterred accoucheurs from the performance of the operation. It has been feared that the pain of incisions, in a part already irritated by a fœtal pressure, and in persons inclined to nervous disorder by prolonged labor, might be productive of mischief. This fear is wholly groundless; the incisions themselves being scarcely felt by the patient, and the relief actually afforded by them being very great. Others have dreaded an extension of the incisions during pain, so that they might come to involve the substance of the uterus, and produce the fatal effects of rupture. This is visionary. The incisions do sometimes yield a little, but never so far as to reach even the cervical portion of the womb; and the operator, by relieving an impediment to the advance of the fœtus, diminishes instead of increases the danger of rupture.

Lately, it has been feared that excessive hemorrhage might attend or follow the incisions, but this fear is never realized in practice. In cases that require such treatment, the os uteri is morbidly changed, and so bloodless that the hemorrhage from the excisions does not exceed a few drops. Where incisions are made into a healthy uterus, in order to effect a rapid delivery, the bleeding may be greater, but its source is always accessible, and it may, therefore, always be readily controlled, while in such cases, which are almost limited to eclampia and placenta prævia, the danger from hemorrhage can never be equal to the danger of delay. The operation is chiefly indicated, however, in morbid conditions of the vaginal portion of the cervex, such as rigidity, hypertrophy, and malignant disease. For forced delivery, with a healthy cervix, the incisions should be six or eight in number, and not more than three lines in depth.—*N. Y. Jour. of Medicine.*

Treatment of Diphtheria.—Dr. Greenhow, well known as an authority on this subject, makes known his most recent experience in regard to the treatment of diphtheria, in a clinical lecture reported in the London *Lancet.* In his estimation, the most valuable of all remedies in the asthenic form of the

disease, is the tincture of iron (tinc. ferri chloridi, U.S.P.) in full doses, proportioned to the age of the patient. In milder cases he uses the chlorate of potassa both as a gargle and internally. As far as we can judge, these medicines are in very general use by American practitioners. We are in the practice of directing the patient to retain the medicine, whether the iron or the chlorate, for some moments in the fauces before swallowing, so as to get the benefit of their local application. An excellent method of using the chlorate for children is to powder the salt finely with an equal quantity, or twice the quantity, of sugar, and put it in the mouth frequently, a pinch at a time. This mode of administering it is very beneficial in many throat affections of adults.—*Pacific Med. & Surg. Jour.*

Syphilitic Sarcocele. Sloughing of the Scrotum. Removal of the Gland. Nitrous-Oxide. ——, æt. 22 The patient contracted chancre three years ago, which was followed by inguinal enlargement and profuse skin eruption. Ulceration of his nose is a prominent symptom, and the part has assumed the flattened appearance consequent upon the loss of its bony structure. About a year since, the right testicle began to enlarge, became heavy, very hard, and, at times, painful. Six weeks ago, the testicle increased enormously in size, the skin covering it sloughed, leaving the organ entirely denuded. There is a fetid discharge, which weakens him very much. In this disease we find the organ infiltrated with a yellowish lymph, which is deposited in and around the tubes, finally obliterating the normal structure. The parts here have sloughed to such an extent as to leave no chance for the organ being covered by skin. In consequence of this, the great discharge, and the disorganization of the part, we shall remove it. The nitrous-oxide was inhaled, perfect anæsthesia being induced, an incision was made running up the cord, which was turned out and divided. The hæmorrhage being controlled with one acupressure needle. —*Medical & Surgical Reporter.*

The Hydrate of Lime.—Liebig suggests that, in close rooms and on shipboard, deficient ventilation may be compensated by the use of hydrate of lime. Eighteen or twenty pounds of slaked lime will absorb thirty-eight or thirty-nine cubic feet of carbonic acid gas, which would be immediately replaced by an equal volume of fresh air entering through the crevices.

Mortality for the Month of April.—The mortality report for the month of April, as compiled by the health-officer, is given below. The report shows an increase of 28 deaths over the mortality of the same month in 1865, and an increase of 24 over the number for March. It would be difficult for the disciple of Hippocrates, however, metaphysically inclined, to deduce from the following careful figures any indications of a visitation of the cholera. The number as usual will increase until September, consequent on the usual summer causes:—

CAUSES OF DEATH.

Accidents,	7	Fever, Scarlet,	6
Bright's Disease,	1	Fever, Typhoid,	9
Bronchitis,	1	Fever, Typhus,	2
Burned,	2	Hydrocephalus,	6
Cancer,	2	Inanition	1
Childbed,	8	Inflammation of Brain,	11
Chlorosis,	1	Inflammation of Bowels,	8
Colic,	1	Inflammation of Lungs,	24
Congestion of Brain,	4	Inflammation of Throat,	1
Congestion of Lungs,	4	Intemperance,	1
Consumption,	37	Measles,	4
Convulsions,	23	Neuralgia,	1
Croup,	16	Old Age,	9
Debility,	1	Poisoning,	1
Delirium Tremens,	1	Rheumatism,	2
Diarrhœa,	2	Scrofula,	1
Diarrhœa, Chronic,	1	Stillborn,	9
Diphtheria,	5	Stone in Bladder,	1
Disease of Bowels,	2	Suffocation,	2
Disease of Heart,	1	Teething,	5
Disease of Liver,	3	Tuberculosis,	1
Dropsy,	9	Typhoid Pneumonia,	1
Drowned,	6	Unknown,	23
Dysentery,	3	Whooping-Cough,	1
Erysipelas,	1	Wound,	2
Fever, Childbed,	2		
Fever, Congestive,	1	Total,	278
Fever, Remittent,	1		

Ages of the Deceased.—Under 5 years, 129; over 5 and under 10 years, 16; over 10 and under 20, 17; over 20 and under 30, 36; over 30 and under 40, 23; over 40 and under 50, 24; over 50 and under 60, 11; over 60 and under 70, 8; over 70 and under 80, 6; over 80 and uuder 90, 1; unknown, 7. Total, 278.

NATIVITIES.

Chicago,	128	France,	1	Sweden,	2
Other States,	56	Holland,	1	Unknown,	6
Canada,	2	Ireland,	24		
Denmark,	1	Norway,	4	Total,	278
England,	3	Nova Scotia	1		
Germany,	45	Scotland,	4		

North, 65 | South, 99 | West, 114 | Total, 278

EXPLANATION.—Several editorial articles and book notices are crowded out of this number by the Proceedings of the Illinois State Medical Society.

PERSONAL.—We learn with pleasure that our esteemed friend Dr. LOUIS BAUER, of Brooklyn, N.Y., has returned from his recent visit to Europe, as vigorous in health and professional enthusiasm as ever.

BERKSHIRE MEDICAL COLLEGE.

THE FORTY-FOURTH ANNUAL COURSE OF LECTURES IN THIS Institution will commence on THURSDAY, JUNE 14TH, 1866, and continue eighteen weeks.

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By the recent action of the Officers of the College, two weeks have been added to the Course, making it now eighteen weeks in length; and it will hereafter commence on the Thursday nearest the middle of June, instead of the first Thursday in August, as heretofore; thus giving time for a *full* Summer Course, without interfering with the Winter or Spring terms of other Schools.

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THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., Editor.

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Original Contributions.

ARTICLE XXV.

ON THE FUNCTION OF THE MINUTE ARTERIES.

By J. S. JEWELL, M.D., Prof. of Anatomy in Chicago Medical College.

I desire, in the present article, to draw attention to certain facts and views, and some of the consequences to which they seem to lead; which, if they are not new, are not practically recognized as having the importance they seem to me to have.

The points may be briefly stated in the form of propositions, each of which will be in some measure discussed, and, subsequently, their practical consequences considered. They are as follows:—

I. The small arteries or arterioles, previous to their termination in the capillaries, are purely muscular in their middle coat—*contractile* and not *elastic*, as the large arteries are.

II. These small arteries are supplied by, and are as truly under the control of, the organic nervous system as, for example, the œsophagus is or small intestines, etc.

III. That it is the special office of these muscular vessels to impart a new momentum to the blood necessary to circulate it through the capillary system, as truly as it is the office of the heart to impart the initial movement to the blood, or of the ejaculatory ducts, œsophagus, small intestines, and the like to circulate their contents.

1. That the arteries, even of the larger kind, are provided with muscular tissue in their middle coat, is well known and easily demonstrated. That the muscular tissue comparatively increases, as we proceed towards the distal end of the arteries, is a well-known fact. That it is of the unstriped or involuntary kind is also well known; and, that while the larger arteries have the thick middle coat, mainly constituted of fibrous tissue, largely of the elastic kind, with some unstriped muscular tissue imperfectly developed, and, therefore, probably imperfectly contractile, that, on the other hand, the smaller and finer arteries, previous to their termination in the capillaries, have the elastic tissue found in the middle coat elsewhere, *entirely* replaced by muscular tissue of the involuntary kind, while the capillaries are entirely devoid of either fibrous or muscular tissues, and present only a thin, almost structureless wall, apparently just sufficient to separate the blood within from the tissue without the vessel. These facts have been abundantly demonstrated by direct evidence. But they can also, in quite an interesting manner, be established by indirect evidence which I deem it needless to introduce, more especially, since some of it will be introduced in another part of this paper, for a somewhat different purpose.

There can be no doubt then, as to the muscularity of the middle coat of the small arteries, neither can there be any doubt as to the elasticity of the larger arteries. Considering, for sake of convenience, the arterial tubes as one tube throughout their course, we have a vessel terminated at either end by a muscular structure—at one end the heart, at the other the *distal* end of the artery, the muscular structure already referred to, both contractile; while the intervening tube, may, practically speaking, be called *elastic* and *not* contractile. The heart is richly supplied with nerves from the system of organic life, and even has a large number of ganglia imbedded in its structure. In turning to the small muscular arteries, to ascertain if *they* are also supplied with the nerves of organic life, we are brought to our second proposition.

2. That the power and influence of the organic nervous sys-

tem in the various processes of organic life, as we witness them in *animal* life, has not been sufficiently attended to, I have no doubt. That it constitutes, taken altogether, the fountain, or centre, or source, so to speak, of the excitant energy or force, rythmically or constantly dispensed to the various parts of the organism, concerned in executing the organic process on which the continuance of life depends, does not seem to have been sufficiently considered in all its relations, generally speaking. That the various organs, as, for example, the œsophagus, the stomach, the small and large intestines, execute their movements through the agency of the involuntary muscular tissue with which they abound, and that this muscular tissue is normally made to contract by a direct stimulating influence or power conveyed to it, for which it directly depends on this organic nervous system, is *also* well understood. It is well known that all the normally involuntary movements of the body, with, perhaps, some rare exceptions, are executed by this unstriped muscular tissue, excited to action by or through the organic nervous system, as in the examples already given.

Now, since it is a well-established fact, that the small arteries are purely muscular, to the extent already shown, and since this muscular tissue has been shown to be of the involuntary kind, let us see if these small arteries are also supplied with organic nerves, as other parts are from which they materially differ only in size, and whether it can be shown that these small vessels are excited and controlled as other parts are, by the sympathetic nervous system.

When we consider how thickly woven plexuses occur on most all the arteries, as on most of the larger arteries in the cranial cavity, and as, almost without exception, the arteries given off from the aorta within the thoracia, abdominal and pelvic cavities have; and the fact so often demonstrated, that branches or twigs from this nervous system do actually ramify on the small arteries, at least in some parts of the body, it would seem not to require more than a simple reference to the fact. But it is important, as we will see, that this fact, if it be such, should be fully admitted.

If these vessels are muscular, it would not be unreasonable to expect, *a priori*, they are supplied with nerves, as we know the same kind of muscular tissue elsewhere to be, and we have just seen it can be shown that such is the fact, at least, in many parts of the body. Suppose, then, we admit these muscular vessels *are* thus supplied from the organic nervous system.

This being admitted, it seems scarcely possible to avoid the conclusion that these structures are related here, for the same purpose they are related elsewhere, for, *viz.*:—These nerves are here for the purpose, in part at least, of conveying to this muscular tissue the excitant influence which is the direct cause of its action or contraction. The *inference*, I say, seems almost unavoidable, that such *is* the relation. Now, while it is somewhat difficult to offer direct proof that this is true, yet we are not wholly destitute of such proof. Among others, I will mention one experiment, well known, which seems to me, when attentively considered, to be sufficient to show that these muscular vessels are under the control of this nervous system.

If the sympathetic nerve be divided high up in the neck, on one side, in a rabbit for example, immediately after, we have visible expansion of the small arteries and capillaries, etc., of the conjunctiva and ear of that side and, doubtless, in other parts, as a result. [Bernard.] The vessels which have suffered the most remarkable expansion in this case, are the small muscular arteries.

Now, in this case, it seems to me, the only way we can explain the appearances, is to suppose we have done for the muscular structure of the affected vessels what we do for a voluntary muscle, by dividing the nerve which leads to it, it is paralyzed, ceases to contract, relaxes, ceases, in great measure, to resist the expansive pressure of the blood, and does what we would *expect* it to do, *dilates*.

This experiment seems to *me* to show, that what is known to be true, *e.g.*, of the esophagus, from which the vessel differs essentially only in size, is *also* true of these muscular tubes or vessels—that, normally, they *do* contract under an influence derived from the organic nervous system—and, that when, for

any reason, this excitant influence is withdrawn, they cease to contract, as we would expect from analogy. Indeed, we cannot deny this, without creating the necessity of explaining why we have this relation between contractile and nervous tissues in *one* case, without the consequences universally observed elsewhere. Then let us admit the second proposition, at least as probable, *viz.*:—That these small arteries are supplied by, and are as truly under the control of, the organic nervous system as the œsophagus is, or small intestines, etc.

3. In order to prepare the way for fairly considering the third proposition, let us begin by recalling, that it is the office of the heart to communicate the initial impulse to the blood. The force exerted by the heart is expended in two ways:—1st. In setting the blood in motion. 2d. In opposing the elasticity of the arteries, by which latter the force so expended is *conserved*. The arteries, by the means just referred to, are normally maintained in a state of tension. The force conserved by the artery, by virtue of its elasticity, is expanded in reäcting on the contained column of blood, especially in the interva between one ventricular contraction and the next which succeeds it. The blood, being unable to return toward the heart, is steadily forced onward, toward the distal end of the artery, with the exception of the rythmical impulse communicated by the heart, which impulse is felt to the remote extremity of the artery, and to which, in all probability, the pulse is due.

Now, it becomes a question, whether, by reason of friction and other causes, the momentum of the blood is not so much diminished as to make it difficult, if not impossible, to circulate it through the exceedingly small, tortuous capillary passages, unless some means exist for communicating a new impulse to the blood which has just entered, or is about to enter, the capillaries. It certainly is not unreasonable to expect such a means. Now, if the muscular arrangement which we have seen, does actually exist at the distal end of the arteries, and which is provided with a nervous apparatus, is not for some such purpose as this, the question, as to what *is* its use, seems to me unanswerable.

1st. *Analogical Evidence.*—I have before remarked, that these vessels do not differ essentially from some other organs, the action of which is well understood, only in size. You have a tube with unstriped muscular walls, supplied in both cases by the organic nervous system.

Now, we know very well how the esophagus, for example, during the act of swallowing, we will say, of water, is made to propel it in a certain direction, and even against considerable resistance, as that of gravity, or how its action may be reversed, as in eructations and vomiting. I say, that, in this case, a fluid is propelled along a straight tube with considerable force, by its rythmical contraction being rythmically supplied with its contents, as the esophagus is in the successive acts of deglutition. Concerning this, there can be no doubt. In the case of the artery with muscular walls, we have exactly the same conditions—a fluid transmitted through the tube, rythmically in accordance with the heart's action. The question now is, whether the fluid (the blood) passed into the *latter* vessel with an impulse, will, as in the other case, excite contraction. I confess that I cannot see but that it will; and if we deny that it does, we are confronted by the impossible task, as it seems to me, of explaining *why* it does not in the one case, when it *does* take place in the other.

Evidence of the same kind, from the stomach, the intestines, the ejaculatory ducts, and from other members of the animal kingdom, might be given, if I had the time or deemed it necessary.

2d. *Direct Evidence.*—But we are not confined to such evidence as that just adduced. There is positive evidence to show that the vessels under consideration will contract like other muscular organs, under the influence of stimuli. If the mesentery of a frog is drawn out and placed under the microscope, and a galvanic current be transmitted through one of these small muscular vessels, it will immediately contract, until its size is *very* much diminished. But, if the current be too powerful, or too long continued, the vessel ceases to respond to the stimulus, and not only returns to its normal size, but becomes

much enlarged, presenting an aneurismal bulging at the place supposed, becoming much more visible than before. [WEBER.]

The same phenomena may be observed, still better, in the bat's wing. In *this* case, under strong stimulation, these muscular vessels become so much reduced in size as to appear almost obliterated. If too powerfully or too long stimulated, the vessels lose their susceptibility to the stimulant, and relax until they finally attain, in some instances, many times their natural size. [PAGET.]

No better evidence of the kind could be required, to show that these are susceptible and do contract, on the one hand, or that they may be paralyzed, on the other. The question once again recurs now—If it is not the office of these vessels to to propel the blood, what *is* their office? Under like circumstances, we see other organs propelling fluids, why not the same happen here?

To change the view a little. It is perfectly reasonable to suppose when a vessel is suddenly diminished in calibre, it will, for this reason, obstruct the flow of blood through it, and that, as a consequence, the fluid will accumulate behind the point of constriction. It is also perfectly reasonable to suppose that if, for any cause, the vessel should *cease* to contract, either because it had lost the power, or because the excitant influence had been withdrawn, no matter which way now, it should become distended with its proper contents as it relaxed, in fact, that there should be an accumulation of the contents of the vessel at such place. Such phenomena as those I have just mentioned, have been actually observed innumerable times, but especially the last mentioned; and I have to add, in this case, that the blood *is invariably retarded in its movement, or even arrested.* One cannot, it seems to me, witness such phenomena and not be inclined to the view, that the vessels referred to really have as their distinct office that of propelling the blood which enters them, onward, toward, or through the passive, tortuous capillaries.

But, again, there is a class of animals destitute of a heart proper; but in which, nevertheless, the blood is propelled ex-

clusively, as it seems, by vessels similar to those we are now considering—vessels possessed of muscular walls, which consideration will show how powerful and efficient, in the circulation of the blood, simple vessels may become. If similar vessels in the *one* case can *circulate* the blood, it is not unreasonable to suppose in the *other* case, they can *help* to do it. The circulation called the portal—the circulation of the blood *from* the placenta to the child—and many other examples might be given, to show how efficient simple vessels may be in the circulation of the blood.

But, while the evidence is not so complete as could be desired, which has been presented, it is, nevertheless, sufficiently so to show that, in all probability, it is one of the principal offices of these muscular vessels, supplied and controlled by the organic nervous system, to impart a new momentum to, or circulate, or assist in circulating, the blood through the capillary passages.

Within the limits of this paper, only a small portion of the evidence can be introduced and discussed, which might be, on which these propositions rest. But enough, it seems to me, *has* been introduced to give the only one of the propositions, concerning which there could arise much doubt, a high degree of probability. I am now engaged, as my occupations will permit, in an experimental investigation of this subject, more particularly in reference to inflammation, and, so far as I may now conclude from my own observations, the above propositions express the truth. Admitting, then, the propositions as probable, I now desire to consider a few of the most prominent objections, which may be or have been made to these views. They are directed mainly against the third proposition. The first two can be supported on positive evidence; the third is, in great measure, a matter of inference.

OBJECTIONS.

I. The objection which would seem to have the most force, is, that after carefully examining these small muscular vessels under the microscope, one cannot perceive such a rythmical action as has been supposed. At first sight, it would seem that if such a contraction occurred it could easily be seen. But

this is by no means so certain as one would think. Let any one lay bare the heart of an animal while in action, and undertake to say, from looking at it, what its peculiar action is. It is notorious, that competent observers have come to opposite conclusions as to the heart's action, in many respects, for example, as to whether the heart lengthens when it contracts.

Let anyone lay bare a small artery and watch it, and if they can determine it moves at all, they will find it impossible to determine what the real *character* of the movement is. The movement is not only so slight, but occurs with such quickness the eye cannot certainly follow it, and this is especially true of these minute muscular arteries, in which the movements are somewhat different from what they are in the larger elastic arteries, where we have a distinct pulse. I maintain that the movement must take place much more slowly than it does, and, at the same time, the eye be very accurate and quick if it detect it at all certainly. To my mind, this is no sufficient reason for denying the action of these vessels, as claimed. It certainly cannot be objected, they do not have the capacity for action, and that the circumstances make it unreasonable for us to expect it.

II. But it has been objected, that fluids circulate in plants, and can be raised in capillary tubes, a short distance, without the aid of contractile vessels.

As regards the circulation in plants, it is to be remarked there are numerous differences, when compared with the circulation of animals, to be considered.

The circulation is very slow in plants, when compared with that in animals, and, moreover, plants have tubes with firm, unyielding walls, able to resist atmospheric and other pressure, and are supported by a firm, woody texture, making the circumstances quite different from what we have in animals, in which the vessels are comparatively loose and flaccid, and either elastic or contractile, for most part, and ramify in soft, yielding structures; and as regards the capillaries, they are tortuous, have exceeding fineness, and really oppose *physical* resistance to the circulation of the blood through them. I do not

consider the cases as sufficiently parallel to give the argument much force, that, because fluids circulate through plants, apparently without requiring contractile vessels, that the same must therefore necessarily be true of animals. Certainly, the two cases are, in many important respects, so different, as to destroy, in great measure, their parallelism. Then I can see no objection to admitting more than one way of circulating fluids, if the facts require us to, as indeed I think they do. Certainly, such would be more rational than many of the explanations are, which have been offered, of the circulation. But, after all, I am far from denying that the means, whatsoever they may be, by which fluids are circulated in plants, may not also *assist* in the circulation of the blood and fluids in animals.

III. But another explanation has been given of the circulation of the blood through the capillaries, and which *has* even been supposed sufficient to account for the *entire* circulation. It is said, there is an *affinity* between the blood and the tissues, by which the blood is *drawn* or *attracted into* the capillaries. That there is some affinity between the blood and tissues, there can be no question. But when we come to consider whether this affinity is concerned in circulating the blood, we come to quite a different question. Now, I believe this affinity has but little, if anything, *to do* in the circulation of the blood. Nay, I would sooner think it would *embarass* the circulation, than that it aided it. This affinity is, I believe, admitted to be exerted in the capillaries. I understand it to be an *attraction* between the tissue without and the blood within the capillary. I also understand this affinity to be of that intimate kind *only* exerted between contiguous particles, and *not* between particles remote from each other. And, so far as I have any notion of this affinity at all, I understand it to be a force by which contiguous particles are determined or attracted toward each other, modified in some obscure way by the life forces. I do not understand this force to be exerted, as already said, only between contiguous particles, and when it *is* exerted that the *effect* on the *moving* particles (say in the blood) is to *detain* them, rather than drive them forward to make way for their

successors. I confess my entire inability to imagine how this power shall act, either on the blood which is subject to it, so as to propel it onward, or on the remote blood advancing from the heart, so as to *attract* or *draw* it into the tissues, without postulating forces or capacities which have only the merest hypothetical existence, and without involving myself in difficulties which are, to say the very least, inextricable and incomprehensible. It is bad enough, when we come to explain the normal circulation, but the difficulties are immeasurably increased, when we come to explain the abnormities of the circulation, as in congestions, inflammations, and the like.

I cannot, within the limits of this article, do more than allude to this objection, to fully analyze which, and to expose its futility, would require of itself a separate article. I am as far as any one from insisting on a physical explanation, only where such an one harmonizes so fully with, and seems to be so imperatively demanded by, the facts.

While I, of course, admit the existence of this affinity, I deny that it has any considerable share in the circulation of the blood, if, indeed, it has any. Other objections *have* been made, or might be, but they seem to me to be destitute of any considerable force. So far, then, as the objections go, they leave our third proposition with, at least, the same degree of probability attaching to it that the evidence gave it.

To sum up, we seem to have reached, with more or less certainty, the following conclusions:—

1. The small arteries are purely muscular in their middle coat.

2. They are supplied by organic nerves.

3. They are under the control of these nerves, and one of the indispensable conditions of the action of these muscular vessels is, that they receive the excitant influence it is one office of these nerves to convey to them.

4. It is the office of these vessels to assist in the circulation of the blood through the capillaries, in performing which, they are probably the principal agents. They do this as other organs analogous to them circulate fluids, examples of which have been given.

While the blood may be conveyed to the small vessels and capillaries by the agency of the heart and *elastic* arteries, there is reason to believe the blood would either be imperfectly, or not at all, circulated through the capillaries into the veins, were it not for this muscular apparatus, by which the blood receives a new momentum, necessary, and sufficient to circulate it through the capillaries, in spite of the difficulties interposed by the latter.

PRACTICAL APPLICATION.

It will only render more probable the truth of the above conclusions, if practical application can be made of them in actual pathological states. I propose, briefly, to make one such application here. One of my chief reasons for presenting this article was, that the application of such views seemed to me to throw new light on the pathology of cholera, which we are constantly expecting in the United States. I had, however, long since began the examination of this subject, in reference to inflammation.

Now let us see if, by keeping these conclusions in view, we can get at a more rational view of the pathology of cholera than has commonly prevailed. And surely, in so fearful a disease as this, concerning which so little is truly known, no serious attempt to throw even a feeble light on its nature should be disregarded.

Admitting, then, that the office of these small muscular arteries is as has been stated, and that one indispensable condition of their action is, that they shall receive rythmically from the organic nervous system the excitant influence on which their action directly depends—I say, *admitting* this—we are in position to see if any agent whatsoever shall so act on the nervous system as to diminish (we will say) its energy, that in proportion as these vessels depend on it in the way indicated, in exactly that proportion will they be affected, or fail of performing their proper office; and, just so far as the circulation depends on these vessels, just so far will it be affected or fail. If, for any reason, the stimulating influence of the organic nervous system should be withdrawn or destroyed, entirely or partially, death will

immediately follow, in the one case, or, in the other, more or less marked depression of all the organic functions will follow, which depend on the integrity of the organic nervous system and a constant supply of blood. This will be attested, of course, by prostration, coldness of the surface and body generally, from failure of the "chemico vital" processes on which the production of heat depends—feeble pulse, feeble action of the heart, deficient capillary circulation and the like, but especially the latter.

Now, I must say, admitting the views above insisted on, and supposing (as I think we reasonably may) a cause which shall act as I have indicated, the consequences related are logically deducible. I will now state, briefly, what I believe to be the history of a marked case of cholera, that it may be compared with the views and general statements just made:—

1. I believe cholera to depend on a specific epidemic cause, probably unknown save in its effects.

2. This cause I believe to be introduced into the blood. When there, it may, and probably does, act on the blood; but its most important, if not its primary action, is on the organic nervous system.

3. That the immediate effect of its action on this nervous system is to impair or destroy its energy in a manner more or less marked, and mediately or secondarily all the organic functions which depend on this nervous system.

4. That the destruction or withdrawal of this energy, or excitant power, according to its completeness, in the same degree affects the system of organs whose office it is to supply the various parts of the body with nutriment or blood, namely, the heart and muscular arteries, particularly the latter, which are at the threshold of the tissues, and, as a consequence, we have failure, more or less, of those intimate actions between the blood and tissues, on the proper performance of which, the welfare of the organism depends, and that the symptoms are prostration, paleness of the surface, ghastly appearance of the countenance, coldness, feeble action of the heart and small vessels, feeble pulse, local congestions, collapse, failure of all the

true secretions, for want of a healthy supply of blood, and also of that excitant energy on which they depend for successful working, no less truly than do the heart and muscular arteries.

5. That the essential cause of cholera is *not* retained excretory matter, nor, necessarily, a change in the blood *per se*, but, as has been stated above; and that the primary or principal danger in this disease is this profound affection of the organic nervous system, from which the patient may die at once in collapse before discharges occur.

6. But another danger arises secondarily, in most cases, that is from the excessive discharges by which the blood becomes suddenly so much impoverished and so viscid, as to render it alike unfit to maintain life on the one hand, or, on the other, to circulate through the capillaries. These discharges occur in the following manner:—Blood is sent freely and abundantly to the abdominal viscera, or to all those parts, the blood from which is collected by the *portal* vein. The blood once *in* the portal vein, instead of passing as the blood *elsewhere* does, unobstructed into the great blood channels which lead directly to the heart, instead of this, I say, it is required to pass through *another set of capillaries*. Now, if what we have tried to show is true, the small vessels in the intestinal walls (and especially in the soft, yielding mucous membrane) have lost, in greater or less measure, their contractile power, as they have everywhere, against this anomalous condition of the portal circulation there is no help. We have *here* a natural difficulty in the circulation experienced nowhere else in the body save, probably in the kidney.

If our conclusions above given are *true*, it is easy to see why the blood is *detained* here as nowhere else. It is also easy to see, since there is no interruption to the *supply* of blood to the abdominal viscera, there must speedily be a great *accumulation* of blood in the vessels which ramify in the mucous membrane (we will say) of the stomach, and bowels, and in the portal vessels. It is now easy to see, if this state shall continue, that the time will soon come when the vessels will inevitably relieve themselves by copious watery exudation or effusion *on the mucous*

membrane of the stomach and bowels, and that this membrane thus *congested* will be somewhat irritable, to say the least, and that there will be vomiting and purging of a watery fluid, which is nothing more nor less than the serum of the blood, and that it will occur to an extent which will depend on a variety of circumstances. The patient rapidly loses the watery part of the blood which, in turn, in a way well understood, absorbs the fluids from the tissues, and, as we would expect the patient rapidly emaciates, etc. It would hardly be expected of the liver, that it would act under these circumstances, for obvious reasons. That bile, therefore, should be absent from the discharges, is not surprising, but a fairly deducible consequence. The same may be said of the kidneys and urine.

From this excessive loss of water, the patient has a raging thirst, but *any* one acquainted with the principles of osmosis, will see it is impossible much water should be absorbed from a surface, or a mucous membrane, from which water is oozing out in streams, as one might not inappropriately say. What has been said about water, may be *also* said of medicines.

When the nervous system recovers from the shock (if I may so speak) experienced, the heart and muscular arteries, and various secreting organs, etc., resume, *pari passu*, their functions. The pulse returns, the portal circulation is restored, the discharges cease, the secretions reäppear, remedies begin to have their appropriate effects, and so on to recovery, many times in a space far too short (from the inception of the disease until recovery) for us to suppose it essentially a *blood disease*. Such, in view of the above conclusions, are my views, of the pathology of cholera.

Now, what shall be the treatment of cholera in the stage of collapse, which, in fully developed cases, is the only one of much importance?

1st. Remedies, administered in the ordinary way, give but feeble promise of effect in this stage, as an appeal to experience will show. The reason is obvious. If the intention is that the remedy shall be absorbed from the *stomach*, and, in the blood be carried through the body, the state of the portal circula-

tion, it is almost needless to say, forbids it. Notwithstanding this, remedies might be employed, such as calomel, or powerful stimulants, such as will arouse the mucous membrane and stimulate to contraction the engorged vessels, and, possibly, indirectly the neighboring nervous centres.

2d. In view of the coldness of the surface, and condition of its capillary circulation, we would employ heat, severe friction, and powerful external stimulants assiduously, to rouse the susceptibility of the skin, and promote the circulation in the *surface* of the body, and for the purpose of rousing, indirectly, the nervous system, through irritation and stimulation of a surface so large, and, ordinarily, so sensitive, I would use the most efficient stimulants and irritants. But, in view of the probable state of the organic nervous system, which calls for the most active and direct stimulation, which can only be effectually made when stimulants are introduced into the blood, and are carried in it to such parts of the organism as require their agency, and in view of the state of the mucous membrane of the stomach, etc., by which it is unfitted for absorption only imperfectly, I say, in view of all this, we may well look for some other channels through which we may introduce such remedies as are required, or *seem* to be. There are two or three ways in which this may be accomplished:—

1st. By extensive faradization of various parts of the body, and by currents sent in a variety of directions through the body.

2d. By inhalations, as of chloroform, ether, bromine, etc.

3d. By hypodermic injections. In this way, we may introduce beneath the skin, in many places, known quantities of various soluble substances, such as morphia, strychnia, quinia, the active principles of coffee and tea, etc., with the certain assurance they will be rapidly absorbed by the flaccid vessels and carried to all parts of the body, and in this way made to act speedily on those parts of the organism upon reaching which, with appropriate agencies, the fate of many cases depends. Such, in brief, are my views of the pathology and treatment of cholera.

To fully unfold or set forth the subject glanced at in this paper, would require a *series* of essays.

The views advocated in this paper have been incidentally referred to in a report, made to the Illinois State Medical Society, on "Cerebro-Spinal Meningitis." They are presented here because they are deemed important, and especially in connexion with our expected visitant—cholera, in which I have briefly tried to apply them; and because they have not seemed to me, for some time past, to have been sufficiently recognized by the profession.

It would be a pleasant task to apply these same principles to the inflammatory process, in all its phases, in exudations and the like, and various pathological states, and see how far, if these principles be admitted, the prevalent doctrines of inflammation are from the truth, etc. But I have neither time nor the space for this.

ARTICLE XXVI.

A NEW PLASTIC OPERATION FOR CERTAIN DEFORMITIES OF THE FACE.

By E. ANDREWS, M.D., Prof. of Surgery in Chicago Medical College.

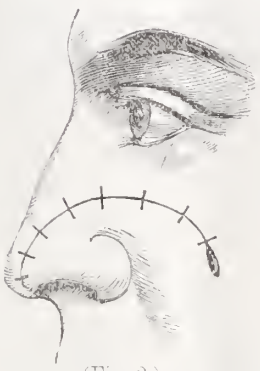
It is very difficult to say that any plastic operation is absolutely new, because so many have been performed which have never been published, that it is probable that almost every possible prineiple has been made use of by some one. Still a careful examination of both European and American authorities have failed to furnish me any president for a mode of operating which I have used for some time, in certain cases, and which I deem very valuable. I, therefore, judge it to be a new operation. If, however, it shall appear that any one has practiced it before me, I will cheerfully resign my claim to priority, simply

hoping that so useful a principle will not be allowed again to slumber where it cannot be found for practical purposes.

There are very serious objections to that whole class of plastic operations which consist in transplanting flaps of integument which have been completely dissected out of their beds, and only retain vascular connections at one extremity. They have so feeble a circulation that they run great risk of failure to adhere in their new locations, and may even mortify from slight causes. Again they are surrounded on all sides of their new location by a cicatrix which, after some months of contraction, very much restricts the flow of blood to them. The amount of obstruction offered to the passage of blood by an old cicatrix is very great. Hence such flaps, though they look extremely well at first, after a time begin to be atrophied, and often by the unexpected amount of their contraction, reproduce the deformity they at first corrected. I have seen old flaps of this sort which had shrunk to one-third of their original diameter.

Impressed by these difficulties, I have sought to devise methods which will allow of keeping all the more important arterial trunks untouched in the flap. My first attempt was in the case represented in Figs. 1 and 2. The deformity consisted in the loss of the left *ala* of the nose, nearly up to the nasal bones. Observing that the stump of the cartilage had a smooth, firm border, well healed, and exactly of the shape to make a good edge of the nostril, I determined to make use of it for that purpose. Making an incision, therefore, along the semicircular dotted line, I produced a flap broadest at the base, and receiving on its interior surface the abundant branches of the facial artery. Dissecting up from the nasal bones a few rather firm adhesions, I found that, owing to the looseness of the tissues of the cheek, it was easy to revolve the flap on its centre without cutting its subjacent connective tissue and

(Fig. 1.)



(Fig. 2.)

vessels. I, therefore, refreshed the edge of the nose in a strip marked by the dotted line from the tip of the flap to the tip of the nose; then revolving the flap on its centre, I placed its cicatrized border in the position of the natural edge of the nostril, and fastened the whole with sutures, as shown in fig. 2. The outer extremity of the incision folded its edges by each other in such a manner as to allow of complete closure of the wound. The result was most excellent.

From the experience of this instance, I am led to believe that often in case of the loss of the whole cartilaginous portion of the nose, the best method of restoration would be to bring in two flaps in the same manner, one from each side, instead of transplanting tissue from the forehead.

The second operation was an application of the same principle to the eyelid, for the cure of entropium. The lower lid of a patient had been drawn down and everted, by the contraction of a cicatrix following a burn, and presented the appearance shown in fig. 3.

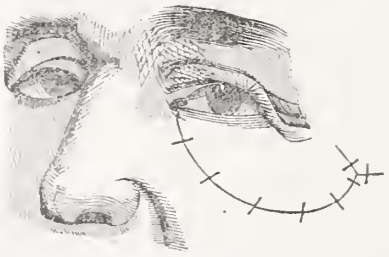
(Fig. 3.)

On measurement, the tarsal border of the everted lid was found to be so stretched by its downward traction that it was about one-third longer than its fellow, requiring to be shortened by that amount. I commenced by making an incision from the inner canthus along the line of junction between the mucous membrane and the skin, separating the two membranes freely from each other, until the knife had traversed about one-third of the length of the tarsal border; then turning the edge downward, I made a semicircular sweep in the direction shown by the dotted line in fig. 3. A short in-

cision was made from the outer extremity of this sweep, upward and inward, to liberate the flap from the traction of the skin of the temporal region. It will be seen at a glance, that this flap not only had a broad vascular communication through the conjunctiva and the skin near the external canthus, but what is still more important, it preserved intact the whole group of arterial twigs given off from the infra-orbital artery. By experiment, I found the subcutaneous tissue of the flap so loose that by simply dissecting up a little of its lower edge, it was easy to slide or revolve the whole of it upward and inward to its proper position against the eye.

(Fig. 4.)

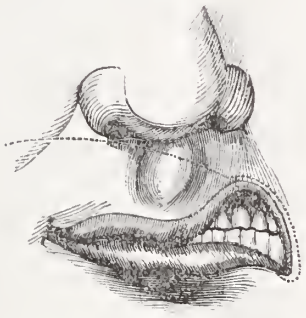
It was revolved in this manner, therefore, until its apex, that is, the point where the incision turned downward from the tarsal border, was carried upward and inward quite into the inner canthus, where it was lodged and stitched into the incision between the mucous membrane and the integument. Figure 4, represents the flap in its place, with the sutures inserted, but not yet tied. The flap having being cut with the lower edge corresponding to the direction of its curve of revolution, filled without difficulty the place intended, leaving a vacant triangular space near the malar bone. The sutures sloped inward, as shown in the cut, in order to hold the flap well up to its place, and the triangular vacancy was closed by three stitches, drawing its sides to the centre, as shown in the figure. On tying the sutures, the whole presented the appearance displayed in fig. 5.



(Fig. 5.)

This patient had an attack of traumatic erysipelas, which

destroyed a part of the adhesions; nevertheless, the result was very good, though not quite perfect. In another case of the same sort,. I took the precaution to free the flap a little more from its subcutaneous adhesions, and to place it higher up against the eye, to allow for a little settling or depression, which occurs after the operation in consequence of the elasticity of the tissues. This gave a still better result. The punctum lachrymal in this case had been destroyed, so that no care was required to avoid it; but when it exists, it should be left on the conjunctival side of the incision, and care be taken not to injure the lachrymal duct. During the healing, and for some time after, the flap was kept supported by adhesive straps.



(Fig. 6.)

Encouraged by my experience in these cases, I have applied the same principle to the restoration of lost portions of the lips. I have operated on four such cases in this manner, with the most perfect success. Fig. 6, represents the first of them. The left half of the mouth had been reduced to the form of an open triangle by a previous attack of gangrene, which destroyed a portion of the cheek and about one-quarter of the upper-lip. After the parts had healed, they presented the appearance shown in this figure. The prolabium of the upper-lip was drawn up so as to constitute the inner side of the triangle; the old cicatrized edge of of the cheek constituted its outer side, and the prolabium of the lower-lip its base. Taking the scalpel, I pared the cicatrized edge of the cheek, and then cut through the whole thickness of the lip, along the curve shown by the dotted line. The flap was then easily revolved into the position

(Fig. 7.)

shown in fig. 7, and fastened with sutures and adhesive straps. The lip is always favorably disposed for adhesive union, and the results in all my cases on this organ were all that could be desired.

This method of operating is, of course, not adapted to all facial deformities; but where it is applicable, it affords the following important advantages:—

1st. The flap is better nourished, and, therefore, less liable to mortify, or fail of adhesion, than in any operation hitherto devised.

2d. For the same reason, it is less liable to a slow subsequent atrophy.

3d. There is no open spot left after the operation to heal by granulation and form an unsightly scar.

ARTICLE XXVII.

REMARKS ON DR. WRIGHT'S THEORY OF CHOLERA.

BY D. W. FLORA, M.D., of Chicago.

From the regularity in the times of the advent of cholera, and the universality and sameness of its effects upon the human being, Dr. WRIGHT concludes that the predisposing cause is not found upon, nor within, the earth, but that some other planet or celestial body, in crossing the earth's orbit, leaves in space some influence imperceptible to the senses, but baleful to the health and life of mankind.

The Doctor might have included the inferior animals as coming under this "baleful influence." Preceding and accompanying the cholera in the year 1832, in India, Russia, and Poland, not only the cattle, but camels, dogs, goats, and poultry died from a peculiar plague or pestilence, while the rooks, daws, and migratory birds, perceiving this "baleful influence," took their untimely departure. In the department of the Seine, in France, the carp in the ponds died in great numbers during the

cholera season. At each subsequent visitation of this scourge of mankind, the same phenomena have occurred, as witness the *rinderpest* in Russia, England, and other countries.

It is hardly necessary to mention the "miasmatic," the "animalcular," the "cholera cell," and the "cholera dust" theories. They are all contradicted by well-established facts. The facts and arguments in favor of contagion and against it are pretty equally balanced.

Dr. WRIGHT'S theory of celestial origin excludes all telluric influences as predisposing causes. In fact, I am disposed to regard them as merely effects or, at most, modifying causes. Dr. BARTHOLOW considers the special telluric influences favoring the rise, development, and spread of cholera to be, long-continued dryness of the atmosphere; a high temperature; a close and still atmosphere, with increased pressure, as indicated by the barometer; and *an almost total absence of ozone.* This last phenomenon I look upon as most important in directing us to the true cause of cholera; for, whether ozone be regarded as an independent element, or merely electrified oxygen, its presence in the atmosphere depends, in either case, upon electrical disturbance, and its absence indicates a corresponding want of electrical action.

So pleased am I with Dr. WRIGHT'S theory, that I am willing even to accompany him to the celestial bodies, to learn more of it. But the Doctor will not admit that this sidereal, solar, lunar, or cometary influence which produces cholera is appreciable by our dull senses, or any aids which we may bring to bear in our search for it.

There is one celestial influence which is known to be exerted on this earth, namely, the magnetic attraction of the sun and moon. This is demonstrated by the mariner's needle. Why may not the planets and other heavenly bodies exercise a similar influence? The Doctor says, most truthfully, that the sensible seat of cholera is in the lining membrane of the stomach and bowels, which is the same as saying that cholera attacks and destroys the nutritive or vegetative system of man, which is sometimes called the system of organic life. Little is said of

the influence which electricity and magnetism exert upon this function which in animals and vegetables is the same, namely, absorption and assimilation. Some of my readers may remember the experiments made some years ago by applying galvanic currents to germinating and growing plants, by which these processes were greatly accelerated. Man is sometimes spoken of as though he was comparatively independent of certain earthly or telluric influences, the earth being considered merely as a "house" or "tabernacle." Nothing can be further from the truth. Man, with regard to this vegetative or organic life, is as much dependent upon the earth and surrounding elements as the plant upon its surface. His perfect organism (exceeding all others) is not life. It is passive—furnishing a condition of life merely. It is only by the action of such agencies as oxygen, hydrogen, light, heat, electricity, magnetism, etc., upon his body and the reaction of the body upon the same, which give us the phenomenon which we call life. Derange the relations which his organism bears to one of these agencies or elements and the functions of the body are proportionately deranged. Withdraw or destroy one or more of these external agents, and death of the organism is the result.

This nutritive system is spread out over a great surface, resembling the leaves of the plant, for it must be borne in mind that the leaves are more than lungs, they are digestive organs. How admirably this great surface is adapted to the electrical action or function which is always on the surface.

The Doctor, in speaking of the progress of an attack of cholera, says:—"That the natural attraction of the capillary system for the blood must not only be suspended, but instead of the constant affinity existing between the blood and the solids, resulting in health, in the molecular changes of reproduction and decay, cholera, either through morbid impressions upon the ultimate nervous fibrillæ, or through changes in the blood itself, or both together, induces a state of *positive* and *energetic repulsion* between the solids and liquids throughout the entire structure." What is the cause of this repulsion? What is the constant "affinity" mentioned as existing between

the blood and the solids but magnetic attraction, and what is the "energetic repulsion" but magnetic or electrical? The body, as a whole, is a magnet; the blood globules, by reason of their iron, are magnetic also. In this mutual repulsion between fluids and solids, the bowels are entirely passive. This, Dr. WRIGHT recognizes, when he says:—"The fluids reverse violently their natural course of progression; not by reason of attraction, or disease, or any special condition of the bowels, but by *repulsion* from the general capillary, or peripheral, or ulterior tissues."

In speaking of cramps, and their cause, the Doctor remarks, "that although the respiration may be sufficient, it is plain to see that the vital changes in the blood are not perfectly performed." This is attributed to the fact "that the lungs suffer from the great drainage, in common with the rest of the system." Is not the office of the lungs, in a great degree, passive, as shown in artificial respiration, where they act more like a pair of bellows. The reason assigned above for the imperfect aëration of the blood cannot be the true one, so long as "inspiration and expiration are sufficient." May not this imperfect aëration, and also this repulsion between the blood and solids be due to *want of a proper amount of electricity in the inspired oxygen?*

May not this want of electricity, in the lung capillaries and surface capillaries of the body, be the cause of the inertia in the vascular system? The relation of positive and negative, as existing between the blood and these capillary systems, is probably changed, and hence the "energetic repulsion." Dr. WRIGHT'S pathology and treatment are eminently sound and rational, and he remarks, in view of the relative influence of fear as a depressing cause, and regimen as conservative to life: "It is a principle beyond cavil, that there is a certain amount of nervous energy natural to each personal organization developed in health within certain periods, no more, no less." This answers the question, why all persons do not have cholera when the cause is so universal. It is the want of this "nervous energy" which predisposes to cholera, as the presence of it in

a high degree fortifies the possessor against the cholera influence. In regard to the electrical phenomena attending cholera, my personal experience is limited, as well as my opportunities of ascertaining the results of other men's observations.

During the year 1850, many of the towns and villages in Ohio were decimated. In a little village of 300 inhabitants, in which I resided at the time, there were 30 deaths. The weather was dry and not excessively warm. But one thunderstorm occurred during the cholera season, and it was followed by a marked abatement of the disease, so much so that fugitives returned and all congratulated themselves that the scourge had taken its departure. But we were doomed to disappointment. In a week or two it broke out with equal violence, and did not stop short of decimation. The absence of electrical phenomena was found to coincide with the absence of *ozone* in this locality. This has been the observation of several of my medical acquaintances, but I cannot claim from my own knowledge that it was a general condition.

A few words as to treatment, and I shall have done. Dr. WRIGHT and some others which I have read, seem to be opposed to friction. Now, friction, with a view to arrest the cramps, can do no good, and may, as they claim, do harm by depleting the already collapsed vascular system. But gentle friction, surface rubbing with a hair glove or the dry hand to excite electrical action, cannot fail to do good. Nay, galvanism is strongly indicated, and when it is remembered that by it the temperature of a paralyzed limb has been raised 7° of Fah. it promises, if judiciously and scientifically applied, beneficial results. There is one fact to which I will briefly refer and then close.

All authorities which I have read recently, condemn the use of moisture and moist applications to the body. They all unite in saying that it favors *collapse*. This I can readily believe, for moisture is a bad conductor of electricity, and the poor patient by its application is cut off from even such an amount as might be generated by contact with the dry bedclothing and the atmosphere, hence, it is proper to use dry heat, dry mus-

tard, and dry ice to the spine, as recommended by Dr. CHAPMAN, in his work on cholera.

157 Cottage Grove Ave., June 19, 1866.

ARTICLE XXVIII.

REPORT ON THE PREVALENCE OF DISEASES, IN THE CITY OF CHICAGO, FROM APRIL 1ST, TO JUNE 30TH, 1866.

BY N. S. DAVIS, M.D., Committee.

Read before the Chicago Medical Society, July 6th, 1866.

During the three months ending June 30th, 1866, the general sanitary condition of this city has been better than during the same part of the two preceding years. The months of April and May were cool and comparatively dry. The adoption of a scavenger system, though very imperfect, and the extra efforts to clean the street gutters and alleys earlier than usual, has made a perceptible improvement in the physical condition of the city. Still there are many things injurious to the public health that remain untouched, but they have been so often alluded to in former reports, that further enumeration is unnecessary at present.

During the past three months, the hydrant water for the city has been in comparatively good condition, and until the middle of June, the river was not notably offensive. Since the last-named period, the North Branch has been emitting a very offensive odor, and the South Branch, above 12th Street, has not been much better.

The atmospheric conditions during the months of April and May were highly favorable to health. The electricity was abundant, the moisture less than usual for the season, and the prevalent winds from the north, north-east, and west, rendering the atmosphere cool and invigorating to animal functions.

The only exception to this general condition, was the 19th of May, when a direct south wind brought a current of hot, damp atmosphere, extremely oppressive, but which ended in slight showers in the evening, with a change in the wind to the north, and decided coolness on the morning of the 20th. The same general conditions continued until the morning of the 8th of June, which was ushered in with a wind from the south, and continued hot, sultry, and very oppressive all day. Showers of rain fell in the evening. On the morning of the 9th, the wind blew from the west; and on the 10th, from the north and north-east, and both days were cool and bracing. During the morning of the 11th, the wind again changed to the south, and the afternoon became very hot and oppressive, with slight showers in the evening.

During the last three days, I have met with seven severe cases of dysentery, and several slighter ones, in different parts of the city. These constitute the first notable indications of the prevalence of bowel affections this summer.

The night of the 11th and all the 12th, the atmosphere continued hot, damp, and oppressive, with copious showers in the afternoon. Attacks of diarrhœa and dysentery increased rapidly, especially in children. One very severe case of cholera-morbus, in an adult, occurred during the night of the 11th, at 212 Kankakee Avenue, and another on West Harrison, near Morgan Street. Both were accompanied by cramps in the extremities and rice-water discharges, but neither proved fatal.

During the 13th, the wind was from the west, and the atmosphere cooler and dryer. The 14th, wind, in the morning, south, warm, and damp, but changed to S.W., with showers in the afternoon. During the 15th, 16th, 17th, 18th, and 19th, the wind was north and north-west, with the atmosphere dry, clear, and cool enough to make an overcoat comfortable. During these days, I saw only two new cases of cholera-morbus, but cases of dysentery continued to multiply, both in children and adults. On close inquiry, however, nearly all the cases began between the 11th and 14th.

On the 20th, wind again changed to south, and the afternoon

very hot, oppressive, but clear. 21st, same, with showers and some lightning in the afternoon. From the 22d to the 26th, the prevalent wind was from the south and south-west, atmosphere hot and oppressive in the afternoon, but often cool and pleasant in the morning, and generally dry.

During these warm days, from the 20th to the 27th, both serous diarrhœa and dysentery increased rapidly among young children, and to some extent among adults. The increase was so marked that nearly one-half of all the patients under my care, both in the office and out, were affected with one or the other of these diseases.

The 28th was cool and cloudy, with north-east wind. 29th and 30th, clear, cool, wind north and north-east.

From these detailed memoranda, as they were made from day to day, it appears that the first noted increase of bowel-affections for the present season was during the hot, damp, showery days of the 11th and 12th of June. It was during the night of the 11th, that I noticed the two first cases of severe vomiting, copious serous or rice water discharges, with muscular cramps, etc., in adults. One was a female, residing at 212 Kankakee Avenue, in the extreme southern part of the city, and the other was a man, on West Harrison Street, far towards the western border. From that date to the end of the month, ordinary attacks of diarrhœa and dysentery have continued to increase, especially among young children. But I have observed nothing unusual in their tendencies or results.

The only disease that has prevailed so extensively as to merit the title of epidemic, during the last three months, is measles. It first began to attract my attention on account of its unusual prevalence during the second week in June. It continued to prevail in all parts of the city through the remainder of the month. The cases were most numerous and severe between the 10th and 20th of June. Several adults suffered severe attacks, and in a few instances I found five and six cases in the same house, including the mother and all the children of the family. In a majority of the cases, the catarrhal symptoms were very severe; the eruption copious, and in some accompa-

nied by sudaminæ. In a few of the cases of children under two years of age, lobular pneumonia supervened during the active stage. In two cases of nursing children, about the time for the decline of the eruption and fever, universal capillary congestion of the lungs supervened suddenly, giving to the lips, surface, etc., a dark purplish appearance, and causing speedily fatal results.

Coïncidently with the prevalence of measles, there occurred a considerable number of cases of scarlatina and whooping-cough. Between the 13th and 20th of June, several cases occurred, presenting the symptoms of a mild grade of cerebro-spinal meningitis, and in two the disease was more fully developed and proved rapidly fatal. One of these was a man who had recently arrived in the city from New Orleans, and was taken to the Mercy Hospital. The characteristic dark purple spots were thicker and more universally developed over the whole cutaneous surface than I had ever before seen. In addition to other remedies, the bromide of potassa was given to this patient liberally, but without any apparent effect. He died on the fourth day after admission to the hospital.

The influence of atmospheric conditions on the prevalence of certain diseases, is as clearly shown by comparing the mortality of the three past months with each other, as in the preceding details. Thus, in April, the gross mortality was 278, of which 13 only are attributed to diseases of the bowels; in May, the numbers are nearly the same; but in June, the gross mortality was increased to 319, of which 34 were attributed to cholera-morbus, diarrhœa, and dysentery. Should the special qualities of the atmosphere presented on the 11th and 12th, and from the 20th to the 28th of June, become the prevailing qualities during the month of July, the mortality from cholera, diarrhœa, and dysentery will be unusually great.

ARTICLE XXIX.

TWO CASES OF ANGULAR CURVATURE, SUPERVENING UPON LATERAL CURVATURE OF THE SPINE.

By F. O. EARLE, M.D., of Chicago.

I herewith send the history of two cases, which present some degree of similarity in the phenomena attending them, and are interesting not only on that account, but also as illustrating one or two points in the differential diagnosis of "Potts' disease" of the spine, exhibiting the slow and insidious access of this malady in certain instances, and showing the necessity of a careful and thorough examination, and the great importance of an early and correct diagnosis in these cases.

I have no recollection of seeing the report of similar cases, and they are the first that have come under my own observation.

CASE I. In April, 1865, I was called to see Miss W., *æt.* 19. She said she had always been delicate; she had a very poor appetite; menstruation irregular, always painful, sometimes profuse, on other occasions almost wanting; bowels generally very loose, though sometimes constipated; she also complained of a burning, painful sensation at various points along the course of the spine, which was greatly increased by the slightest amount of pressure, (*spinal irritation*, so-called,) and examination revealed the existence of a well-marked lateral curvature. She had, moreover, a very pale countenance, constantly complained of exhaustion, her temper was rather irritable, and every movement was indicative of extreme languor.

Regarding all these symptoms as the result of the manifest debility of the organic system, consequent upon an increased irritability of the nervous system, the case was treated in the following manner:—Attendance at school was prohibited, and rest from bodily exertion and mental effort insisted upon. A general tonic course of treatment, in connection with a system of "localized exercise," given daily, was adopted. At the end of two months, my patient had improved in every respect. The

painful sensitiveness of the back was entirely relieved; the curvature had almost entirely disappeared; and all the organic functions were performed without that distress and uneasiness by which their actions were formerly characterized.

At this time, she went into the country, and after an absence of a few weeks, returned still more improved, declaring that she was "enjoying perfect health," which appeared to be the case.

In the latter part of April, 1866, I was requested, by the young lady's mother, to see her again. She said the curvature had increased, and, on examination, I discovered that such was *apparently* the case, though a more critical survey disclosed a very slight projection backward of one spinous process in the centre of the supposed curve. This appearance led me to inquire if the patient had suffered any from *pain in the region of the stomach*, and I learned that she was then taking remedies, prescribed by the medical attendant of the family, for dyspepsia, which it was supposed was causing the painful sensations experienced by the patient in the epigastric region. I then requested the patient to stretch the arms above the head and bend forward without flexing the spine, while, at the same time, I grasped the hips firmly. By this means, the *lateral deviation* disappeared, though the projection still remained, leaving no room to doubt the true nature of the case.

I immediately explained the nature and result of the malady to my patient, and, at her mother's request, applied a proper mechanical support. Her vitality being very low at the time, she showed scarcely any signs of improvement until about two weeks since. There is now an amelioration of all the constitutional and local symptoms.

It may be questioned by some reader of this article, whether ulcerative inflammation of the bodies of the vertebræ or of the inter-vertebral substance was not present when this patient was first seen. I answer, no! if such had been the case, all the symptoms would have been aggravated, rather than mitigated, by the treatment at that time adopted.

Case II. Miss B. *æt.* 23, very tall and slim, presented her-

self, two years ago, for advice with regard to lateral curvature. She complained of nothing in particular, excepting "want of strength." Examination showed lateral curvature in its first stage—there being a lateral bending of the spine low down. A simple apparatus, made of firm webbing and applicable to such cases, was applied, and certain specific and general exercises were given to develope the dorsal muscles, and with such good effect that she was dismissed in a few weeks, greatly benefited.

A short time ago, she returned, at the request of the family physician, saying that the curve was increasing. The statement was doubted, it being so unusual for a lateral curvature to be developed at that age. But a physical examination disclosed the fact that it *was* increasing. Upon minute inquiry being made into the accompanying symptoms, it was found that there *was difficulty of turning or rising after lying down, particularly in the morning;* and a *dull, scarcely noticeable pain in the stomach, especially when she was fatigued.* By stretching the arms above the head and bending forward, as in the other case, the 1st, 2d, and 3d lumbar vertebræ were seen protruding in the manner that is usual when there is loss of substance in the bodies of the vertebræ. In connection with this projection, was a recession of the last dorsal vertebræ.

An apparatus was applied, as in the first case, and with even happier results, the lateral deviation disappearing at once.

Proceedings of Societies.

MEDICAL CONVENTION.

Pursuant to previous notice, physicians from the counties of Bureau, Henry, Knox, and Stark met at Kewanee, May 22d, 1866, to organize a District Medical Association.

On motion, H. S. Hurd, M.D., of Galesburg, was called to the Chair, and Geo. H. Scott, M.D., chosen Secretary.

On motion, proceeded to the organization of a District Medical Association.

On motion, a committee of three, consisting of Drs. N. Holton, of Buda, Jas. M. Morse, of Galesburg, and J. C. Smiley, of Kewanee, were appointed, to present a constitution and by-laws for said association.

The committee submitted the following Constitution and By-Laws which, on motion, (the committee being discharged,) were approved and adopted, article by article:—

CONSTITUTION.

ART. 1. This Association shall be known and designated as the Military Tract Medical Association.

ART. 2. This Association is to embrace the members of the regular medical profession, who are in good standing in the profession, in the counties of Bureau, Henry, Stark, Knox, and Warren.

ART. 3. The physicians present at the adoption of this Constitution, may be members of the Association.

ART. 4. Any regular graduate of an orthodox school, or any physician passing a satisfactory examination before the Board of Censors, may become a member by a vote of the Association.

ART. 5. The officers of this Association shall consist of a President, Vice-President, and Secretary, who shall act as Treasurer, and three Censors; to be elected annually, by ballot, by a majority vote of all the members present.

ART. 6. This Association shall be governed by the Code of Ethics adopted by the American Medical Association.

ART. 7. This Constitution may be altered or amended by a vote of two-thirds of the members present at any regular meeting.

BY-LAWS.

ART. 1. The President shall appoint, at each regular meeting, two members to prepare and deliver, at the next regular meeting, an essay on some medical subject, or report a case.

ART. 2. The report of cases and essays made before the Association at its regular meetings, shall become the property of this Association.

Art. 3. Any member who has conducted himself properly during his membership, shall, if he require it, receive a certificate of character, signed by the President and Secretary.

Art. 4. The meetings of this Association shall be held twice a-year, in the months of May and December.

On motion, the Association proceeded to the election of officers, when the following were duly elected:—

For President.—A. H. Thomson, M.D., Princeton.

For Vice-President.—H. Nanee, M.D., Kewanee.

For Secretary and Treasurer.—Geo. H. Scott, M.D., Kewanee.

For Censors.—Drs. N. Holton, Buda; Jno. M. Morse, Galesburg; and V. C. Seeord, Galva.

For Delegates to the State Medical Convention.—Drs. H. Nanee, Kewanee; S. P. Breed, Prineeton; Jno. M. Morse, Galesburg; W. C. Brown, Geneseo; and A. D. Babeock, Galva.

Moved and adopted, that the initiation fee shall be $1.00.

Moved and adopted, that the Secretary purehase a blank book, at the expense of six or eight dollars, in which to record the proeeedings of the Assoeiation.

Dr. A. H. Thomson offered the following, as the order of business. Approved:—

ORDER OF BUSINESS.

1st. Reading the minutes of last meeting.

2d. Report of Censors on credentials for admission.

3d. Eleetion of offieers at annual meeting.

4th. Reading of essays, and diseussion.

5th. Report of eases and presenting morbid speeimens.

6th. Miseellaneous business.

On motion, it was decided that our next meeting be held at Galesburg, on the seeond Tuesday in December, 1866.

Moved by Dr. Holton, and adopted, that one from eaeh county be appointed a committee to report on the endemie and epidemic diseases of the county.

The following physieians were appointed:—Drs. N. Holton, Buda; Jno. M. Morse, Galesburg; H. Nance, Kewanee; and E. K. Boardman, Elmira.

Moved by Dr. Babcock, and adopted, that the Secretary notify each member, by circular, one month before the ensuing meeting.

A vote of thanks was passed to the medical brotherhood of Kewanee, for the hospitable entertainments extended to the members of the Association; also to the trustees of the Congregational Church, for the use of their edifice.

The following is the list of members:—

Drs. H. S. Hurd, Galesburg; Geo. H. Scott, Kewanee; A. H. Thompson, Princeton; J. C. Secord, Galva; Jno. M. Morse, Galesburg; A. C. Babcock and A. D. Babcock, Galva; N. Holton, Buda; Geo. W. Crossley and S. P. Breed, Princeton; G. H. Vance, Victoria; H. Nance, Kewanee; S. T. Hume, Geneseo; C. M. Clark, Galva; W. C. Brown, Geneseo; W. H. Day, Kewanee; E. K. Boardman, Elmira; J. C. Smiley, Kewanee.

On motion, the Secretary was instructed to have the proceedings of the Association published in the papers in this District; also in the medical journals of the State.

On motion, the Association adjourned, to meet in Galesburg on the second Tuesday in December.

A. H. THOMPSON, M.D., *Pres't.*

Geo. H. Scott, M.D., *Sec'y.*

ANNUAL MEETING OF ROCK RIVER UNION MEDICAL SOCIETY.

The physicians of Lee, Ogle, and Whiteside Counties, met at Morrison, Ill., on Wednesday, June 13th, it being the annual meeting of the above named Society, for mutual improvement.

The meeting was called to order by the President, Dr. H. Utley.

The minutes of the last meeting were read and approved.

Dr. D. H. Law, of Dixon, and Dr. J. H. Page, of Como, were elected members; and, on motion, Dr. H. E. Dykeman was invited to participate in the proceedings of the Society,

and to be considered a member, on presenting his credentials to the Board of Censors.

The Treasurer reported the current expenses of the Society all paid, and seventy-five cents in the treasury.

Dr. G. A. BARDWELL reported a case of cerebro-spinal meningitis in a young lady. The Doctor reported the case, because of its presenting one peculiarity, *viz.*:—loss of vision in one eye, and a distinct milky appearance of the pupil of that eye.

The disease having prevailed as an epidemic, during the past two years, in several localities in this region, and many of the members present having been called to treat cases of the same, therefore quite a lengthy discussion occurred, which was participated in by several of the members present.

On motion, the following resolution was unanimously adopted, *viz.*:—

Resolved, That, as Dr. D. C. Gould, of Sterling, Ill., who claims to be a "regular physician," and who made application to become a member of this Society, but failed to present his credentials or diploma; and has recently claimed to have discovered a specific for the cholera, which he advertises as worthy of approval by the medical profession, and which he is selling to the people; we take this occasion to state, that we, as a profession, and as individuals, do not endorse the course pursued by him; and we regard his so-called specific a humbug, and himself an imposter.

As officers for the ensuing year, the Society elected Dr. G. A. BARDWELL, President; Dr. M. M. ROYER, Vice-President; and Dr. H. C. DONALDSON, Secretary and Treasurer.

The Society voted the forwarding of these minutes to both Chicago medical journals for publication, and also to the editors of our county papers, published at Dixon, Morrison, and Sterling.

Adjourned to meet at Sterling, on Wednesday, the 5th day of December, next.

H. UTLEY, M.D., *Pres't.*

H. C. DONALDSON, M.D., *Sec'y.*

CLINTON MEDICAL SOCIETY.

At a meeting of the Clinton Institute of Medicine, held on the 19th day of June, 1866, the following preamble and resolutions were, on motion of Dr. John A. Edmiston, unanimously adopted:—

Whereas, We, the physicians of Clinton, Ill., having been, from time to time, strongly solicited by the agent of J. R. Nichols & Co., manufacturing chemists, of Boston, Mass., to prescribe and recommend their chemicals, tinctures, and mixtures; and,

Whereas, We have seen advertisements in the public newspapers, wherein Nichols & Co.'s preparations are recommended and puffed to the public the same as other quack nostrums; therefore, be it

Resolved, That the course pursued by James R. Nichols & Co., for the purpose of introducing their preparations, as shown by their advertisement in the *Chicago Daily Republican* of June 15th, 1866, recommending as a popular medicine for general use, their preparation of the syrup of sarsaparilla with iodide of lime, is not only detrimental to the interest of the public, as well as the profession, but a violation of their assurances, that they would resort to no unfair means.

While they confined themselves to the legitimate object of furnishing the profession their preparations in a pure and reliable form, we believed it a worthy object, and gave them a hearty support; but, by this endeavor to vend one of their preparations on the same plan as the many patent humbugs of the day, they lose our confidence, and, if persisted in, we will consider it good and sufficient cause for their rejection from our practice, altogether.

Resolved, That the Secretary be instructed to forward a copy of these resolutions, signed by the members of this Institute, to James R. Nichols & Co., and, also, a copy to each of the Chicago medical journals.

C. GOODBRAKE, M.D., *Pres't.*

B. K. SHURTLEFF, M.D., *Sec'y.*

Selections.

Local Anæsthesia.—An extract from the following article was copied into the May number of the Examiner, but the subject is of such importance that we have thought it best to republish the whole article.—Ed.

ON A NEW AND READY MODE OF PRODUCING LOCAL ANÆSTHESIA.

By BENJ. W. RICHARDSON, M.A., M.D., F.R.C.P., Senior Physician to the Royal Infirmary for Diseases of the Chest.

Some years ago, I published in the columns of the *Medical Times and Gazette*, some researches for the production of local anæsthesia, by a process which I designated voltaic narcotism. Those researches, very much praised on the one hand, and very rudely and unfairly attacked on the other, failed in the end in leading me directly to any practical means of producing local insensibility applicable to surgical proceedings. The causes of failure were threefold. The apparatus required was very cumbersome; the application was painful; the result was uncertain. In the course of the past year a similar series of experiments have been made by an Italian physician; but whether in imitation of my previous labors or in ignorance of them, I do not know: they have proved equally unsatisfactory.

The researches on voltaic narcotism, although practically of little value, were not in reality without their use. Previously to making them I was quite conversant of the fact—indeed, I learnt it from Snow—that all the narcotics produced anæsthesia by the process of arresting oxidation; but I had still to learn what Snow himself had not reached, that arrest of oxidation meant, in the end, arrest of motion; and that anæsthesia, in truth, means the temporary death of a part influenced—*i.e.*, inertia in the molecules of the part.

Learning this, I discovered that voltaic narcotism had at its base a fault. My idea in it was, that by quickening the circulation of a part by galvanic stimulus, and by applying over the part where circulation was quickened a narcotic solution which the blood could absorb, I could so charge the blood locally with narcotic substance as to produce local insensibility. In feeble subjects, as the result proved, local narcotism could, in this

way, be temporarily set up: but it was always attended with a certain amount of disorganization. In strong subjects it failed altogether, because such of the narcotic as might be absorbed was carried rapidly into the general circulation. In plain words, by the use of the galvanic current, I was committing the paradox of applying a form of motion for the indirect production of inertia.

The failures I experienced at the period referred to in no degree lessened my efforts to find a practical means for producing a local insensibility. They simply caused me to think more on the whole subject, and to invent new methods of inquiry. I came at length to the conclusion that Dr. James Arnott's plan of using extreme cold was the first true step of discovery, and that if it could be made easier of application, and at the same time could be combined with the use of narcotic fluid, an important advance in therapeutics would necessarily follow. For full four years this truth has been before my mind, and I have made numerous experiments with the view of demonstrating it. At one time I tried to freeze parts by the application of ice and salt, and then to inject by the hypodermic plan narcotic solutions into and beneath the frozen tissue. These experiments were never sufficiently satisfactory to allow of their publication. At last I hit upon a method which I am now about to describe, and which, although admitting of very considerable improvement, is sufficiently important to justify me in laying it before the profession.

THE ANÆSTHETIC SPRAY PRODUCER.

When the toy for diffusing eau de cologne in fine vapor over the skin, in the form of spray—which sometime ago found its way into our drawing-rooms—first came before me, it struck me at once that it might be applied to the production of local anæsthesia; and I set to work to try its applicability in this respect. I was soon afterwards assisted largely in my labors by taking advantage of Siegle's apparatus, with the hand-ball spray-producer invented by my valued friend Dr. Andrew Clarke, and supplied by the manufacturers, Messrs. Khrone & Seseman, of Whitechapel road.

With this apparatus I set myself to determine the degree of cold that could be produced by the vaporization of all the known volatile liquids, and I determined the fact that the intensity of the cold produced held a definite relationship to the boiling-point of the fluid used; the rule being that the lower the boiling-point the greater was the amount of cold exhibited. In these

inquiries I employed a very delicate thermometer, directing the spray upon the bulb from half an inch to an inch and a-half from the point of the jet. By these means I learnt that with rectified sulphuric ether I could bring down the thermometer within 10 degrees Fahr. of zero, and that by directing the jet on the skin I could produce a certain definite and marked degree of local insensibility, but not sufficient for surgical purposes.

I next got Mr. Krohne to construct for me a hollow cylinder of thin metal, six inches long and three inches in diameter. In the circumference of this cylinder was a chamber one-eighth of an inch in diameter for containing ether. The ether communicated with a tube which was joined to an air-tube, as in Siegle's apparatus, and the centre of the cylinder was filled with ice and salt mixture. In this way the ether was reduced to zero, and when vaporized gave spray which brought down the thermometer six degrees below zero, and produced on the skin such entire insensibility that I could pass a needle through the part without sensation. On the 11th of December, 1865, I applied this process for the first time on the human subject for an operation. The patient was a lady, who required to have five front teeth extracted. I had previously administered chloroform to this lady for a tooth extraction, but the inhalation had produced so much irregularity in the action of the heart and other disagreeable symptoms, that I considered it inadvisable to repeat chloroform, and she herself was only too ready to give the local measure a trial. The extraction was performed by my friend Mr. Peter Matthews. On directing the ether spray first at a distance and then closely upon the gum, over the first central incisor on the left side, we observed, at the end of fifty seconds, that the gum had become as white as the tooth itself, and quite insensible. I then directed the vapor upon the tooth for twenty or thirty seconds more, and on the patient intimating that she did not feel, I suggested to Mr. Matthews to proceed. He extracted a very firm tooth without the slightest expression of pain. The process being continued in the same manner, he extracted three other teeth with the forceps. The other gave way, and had to be removed by the lever; but in all cases the result was equally good. Not a drop of blood was lost; there was no painful reaction; and the healing process proceeded perfectly. Our patient who was exceedingly intelligent, was specially requested to note every step of the operation, such as the applying of the forceps, the insertion of the blades beneath the gum, the loosening process, and the removal. She told us

that in two of the extractions she felt nothing; that in one it seemed as though the jaw altogether were being pulled downwards, but without pain; that in another she was conscious of a kind of wrench or loosening but without pain, and that the introduction of the lever was attended with a momentary dull ache, just perceptible. On the whole, the process was quite as painless as when she took chloroform.

On December 13th, I applied the local anæsthetic to the same lady for the further extraction of nine teeth, Mr. Peter Matthews again operating. The results were equally good with the first seven, at which point, unfortunately, the apparatus partly ceased play. At the eighth tooth pain was felt, and at the ninth, the apparatus being out of play, the operation caused great pain. We regretted this much, although it gave us the information of the perfect action of the process when no mechanical obstacle interfered with it. The reason why the apparatus stopped play was very singular, and could hardly have been foreseen. It arose from the condensation of water derived from air in the air-tube, and from blocking up the fine jet with a little portion of ice.

In the next step of research, I got Mr. Krohne to make for me an apparatus with two spiral tubes, one the air-tube, the other a tube for ether; and I immersed these spirals in a closed chamber filled with ice and salt. The degree of anæsthesia at first produced was most intense, and Mr. Spencer Wells was good enough to allow me the opportunity of applying the process in a case where an operation was required for closing a perineal rupture. Unhappily the apparatus, from the very same cause as before, ceased to yield a current; water condensed and became frozen in the air-tube. The apparatus itself was also found too cumbersome for practical purposes; I therefore, in this trial failed to obtain any result.

By this time I had been led, very reluctantly, to the fact that the use of ice and salt for reducing the ether was a failure when the plan came to be tried in practice, nor could I see any ready way of preventing the difficulties that were brought before me. Added to these difficulties there was another, which has always attended my friend Dr. Arnott's plan, viz., that of getting the ice and salt readily for operation. To succeed, therefore, it was requisite to dispense with the ice and salt together.

In considering how this object could be achieved, it occurred to me that if a larger body of ether than is supplied by Siegle's apparatus could be brought through the same jet, by mechani-

cal force, in the same interval of time, and with the same volume of air, a proportionate increase of cold must necessarily be produced. The theory was one of pure physics, admitting even of arithmetical demonstration, and running parallel with the lessons which had been taught me with respect to the cold produced by liquids having different degrees of boiling-point. The theory was put to the test at once, and proved correct to the letter. By driving over the ether under atmospheric pressure, instead of trusting simply to capillary action—or to suction, as in Siegle's apparatus—the spray evolved brought the thermometer within thirty seconds to four degrees below zero—the result that was desired.

Ascertaining this truth, I instructed Messrs Krohne & Sesemann to construct a proper apparatus. It consists simply of a graduated bottle for holding ether; through a perforated cork a double tube is inserted, one extremity of the inner part of which goes to the bottom of the bottle. Above the cork a little tube, connected with a hand bellows, pierces the outer part of the double tube, and communicates by means of the outer part, by a small aperture, with the interior of the bottle. The inner tube for delivering the ether runs upwards nearly to the extremity of the outer tube. Now, when the bellows are worked, a double current of air is produced, one current descending and pressing upon the ether forcing it along the inner tube, and the other ascending through the outer tube and playing upon the column of ether as it escapes through the fine jet. By having a series of jets to fit on the lower part of the inner tube, the volume of ether can be moderated at pleasure; and by having a double tube for the admission of air, and two pairs of hand bellows, the volume of ether and of air can be equally increased with pleasure, and with the production of a degree of cold six below zero.

"By this simple apparatus, at any temperature of the day and at any season, the surgeon has thus in his hands a means for producing cold even six degrees below zero; and by directing the spray upon a half-inch test-tube containing water he can produce a column of ice in two minutes at most. Further, by this modification of Siegle's apparatus he can distribute fluids in the form of spray into any of the cavities of the body—into the bladder, for instance, by means of a spray catheter, or into the uterus by an uterine spray catheter.

"When the ether spray thus produced is directed upon the outer skin, the skin is rendered insensible within a minute; but the effects do not end here. So soon as the skin is divided the

ether begins to exert on the nervous filaments the double action of cold and etherization; so that the narcotism can be extended deeply to any desired extent. Pure rectified ether used in this manner is entirely negative; it causes no irritation, and may be applied to a deep wound, as I shall show, without any danger. I have applied it to the mucous membrane of my own eye, after first chilling the ball with the lid closed.

"I have now employed this mode of producing local anæsthesia in four cases on the human subject. The first case was the extraction of a tooth from a lady, the operation being performed by my friend and neighbor Dr. Sedgwick, on January 24th of this year. On the 29th of the same month, I used it again on the same lady for the extraction of three very difficult teeth, Dr. Sedgwick again operating. The results were as satisfactory as in the previous case, where the ice and salt ether apparatus was used.

"I have used the apparatus also in connection with my friend Mr. Adams, who had a case at the Great Northern Hospital of deep dissecting abscess in the thigh of a young woman. In the abscess there was a small opening, which just admitted the director. I first narcotized around this opening, and the director being introduced, Mr. Adams carried his bistoury nearly an inch deep and one inch in the line of the director. I then narcotized the deep-seated parts, and enabled him to cut for another inch and a-half in the same direction. The director was then placed in the upper line of the abscess, the process was repeated, and the incision was carried two and a-half inches in that direction. The patient was entirely unconscious of pain, and after narcotising the whole of the deep surface, Mr. Adams inserted his fingers and cleared out the wound without creating the slightest evidence of pain.

"Afterwards, in the case of a lacerated wound, six inches long, in the arm of a boy, who had been injured with machinery, I narcotized while six sutures were introduced by Mr. Adams. The first needle was carried through without the anæsthetic, and caused expression of acute pain; the remaining eleven needles, after a few seconds' administration of the ether spray, were passed through painlessly. The twisting of the wire sutures gave no pain.

"These results are so interesting that I make no apology for bringing them at once before my medical brethren. I wish it to be distinctly understood that at the present moment I only introduce the method here described for the production of superficial local anæsthesia. It is, I believe, applicable to a

large number of minor operations, for which the more dangerous agent chloroform is now commonly employed—I mean such operations as tooth extraction, tying nævus, tying piles, incising carbuncles, opening abscesses, putting in sutures, removing small tumors, removing the toe-nail, dividing tendons, operating for fistula, removing cancer of the lip, and other similar minor operations which I need not mention. The process may also be applied to reduce local inflammation.

"In course of time, and guided by experience and the advancement of science, we may, however, expect more. If an anæsthetic fluid of negative qualities, as regards irritation of nerve, and which has a boiling point of 75° or 80° can be obtained from the hydrocarbon series, the deepest anæsthesia may be produced, and even a limb may be amputated by this method. It may also turn out that certain anæsthetics may be added to the ethereal solution with advantage, such as small quanties of chloroform, or some of the narcotic alkaloids, if they could be made soluble in ether. A solution of morphia and atropia combined, if they could be diffused through ether, which at present seems impossible, could thus be brought into action so as to cause deep insensibility. In operating on the extremities it would be good practice to stop the current of warm blood by making pressure above on the main artery.

"Reaction from the anæsthesia is in no degree painful, and hemorrhage is almost entirely controlled during the anæsthesia.

"One or two precautions are necessary. It is essential, in the first place, to use pure rectified ether; methylated ether causes irritation, and chloroform, unless largely diluted with ether—say one part in eight—does the same.

The *modus operandi* of this process is exceedingly simple. It acts at first merely by extracting force, and afterwards, when the nervous filaments are exposed, by preventing the conveyance of force through them. To be plain, sensation means the conveyance of force or motion from the extreme parts to the brain. The motion is communicated by the blood in the form of heat: it is communicated to the nervous filaments, and by them is conveyed to the sensorium. This is passive sensibility. When we irritate a nervous fibre, as by a cut, we communicate more motion rapidly along that fibre and cause pain. This is active or exalted sensibility. To remove sensibility, therefore, we must adopt one of three processes: we must remove or render inert the sensorium; we must stop the evolution of force generally by arresting oxidation of blood; or we must rob the body locally of its force beyond that with which it is constantly being

renewed. We see the first of these processes in action in cases of pressure on the brain, as from injury or effusion of blood; we see the second whenever we produce general anæsthesia by charging the blood we chloroform or other analogous anæsthetic; and we see the third when, by means of extreme cold, we rob the local part of the force that has been brought to it by the blood.

The problem of local anæsthesia will consequently be quite solved when by a rapid process we can exhaust the natural force of a part as fast as such force is evolved in the local structure; and especially when with this we can combine the action of a substance which for the moment controls, as by compression, the conducting power of nerve matter. These two latter objects are to a large extent carried out by the method I have described above.—*London Medical Times and Gazette*, Feb. 3, 1866.

REMARKS CONCERNING SOME OF THE DISEASES PREVAILING AMONG THE FREEDPEOPLE IN THE DISTRICT OF COLUMBIA.

(Bureau Refugees, Freedmen, Abandoned Lands.)

By ROBERT REYBURN, Surgeon, U.S. Vols.

The appended Report, which gives the results of the treatment of seven thousand nine hundred and forty-nine (7,949) cases of sick and wounded freedmen, who were under medical treatment in District of Columbia, Bureau of Refugees, Freedmen, and Abandoned Lands, from June 1, 1865, to December 31, 1865, has developed some interesting facts relative to the diseases prevalent among them, to which we desire to call the attention of the medical profession.

This report does not embrace *all* who were under treatment during the above months, but only those cases that were recorded and the results known.

This District Bureau of R. F. and A. L. embraces the city of Washington and the District of Columbia, properly so-called, the three counties of Alexandria, Fairfax, and London, Va., and a part of St. Mary's Co., Md., together with a general supervision of freedmen's affairs in the whole State of Maryland. The total number of freedpeople who are more immediately under the charge of the Medical Department of this district, is, from a census taken by order of the Bureau, and which is now

nearly completed, about fifty thousand; of these somewhat over fifty-two per cent. are full blood Africans, and the remaining forty-eight per cent belong to the mixed races.

The next and last class of diseases to which we will here advert is the tubercular; this includes consumption, what is usually denominated scrofula, and all the other varied forms in which the tubercular diathesis manifests itself.

Out of the total number, as above stated, three hundred and forty-six deaths are recorded, being about forty-three per thousand of those under treatment. This mortality is larger than exists at the present time in this district, and arises from the fact that the greater number of these cases were treated in hospital, and as only the more severe class of cases are sent to hospital, the mortality is larger than the average mortality of the cases treated in hospital and at their homes. Our mortality has been for the last three months about thirty-three per thousand of the number of the cases under treatment, and is now diminishing rather than increasing in amount.

The first and most fatal class of cases (although not the most numerous) in the report is that of typhoid fever. The number of cases of this disease was one hundred and sixteen, and the number of deaths was forty-nine, or nearly forty-one per cent of the number of cases treated. The *post mortem* examinations made in the fatal cases presented the usual abdominal lesions characteristic of typhoid fever, and the only point of difference observable was that the pulmonary and cerebral inflammations which so frequently complicate this disease, and add to its dangers, were found to present a more asthenic type, and consequently were found to be more dangerous in their results than is commonly the case with typhoid fever occurring among whites. The pneumonia which we find so often in cases of typhoid fever occurring in the Caucasian race, in the negro becomes pleuro-pneumonia of a low grade, and is generally accompanied with a large amount of serous or sero-sanguineous fluid, which, after death, is found filling the cavities of the pleuræ. In fact, as a rule, inflammations of the serous membranes seem to be much more frequent and dangerous among negroes than whites, and it is rarely we have examined a negro cadaver which did not present evidences of recent serous inflammations in either the thorax, abdomen, or calvarium. The same condition above mentioned has been found by other observers, and we have been informed by Dr. Ira Russell (late Brevet Lieut-Col. and Surgeon, U.S. Vols.) that he has hardly ever opened a negro cadaver in which there was not a large

amount of serous exudation. The observations of Dr. Russell on this point are deserving of especial weight on account of his having made the diseases and pathology of the negro race a specialty, and from his having assisted in making a large number of *post mortems* of freedpeople, while on duty in the West during the war. It may, however, be objected that in some of the above cases the effusion may have been *post mortem*, but we feel convinced that such was not the case, for the following reasons, *viz.*:—

1st. In many of these cases, percussion revealed the existence of the effusion during life; and, secondly, the amount of effusion was generally so great as to entirely preclude the idea of accounting for it by any mechanical transudation of the serum of the blood through the walls of the bloodvessels after death.

The next class of diseases worthy of notice, is that comprising the various forms of remittent and intermittent fevers. The total number of cases belonging to this class was two thousand seven hundred and seventy-six, or about thirty-five per cent of the total under treatment. This significant fact is, we believe, a sufficient answer to, and refutation of, the statement so often reiterated in our text-books, that the negro race are not subject to, and do not suffer from, malarious diseases.

Now, it may be that in Africa and the West Indies they do not suffer to the same extent that unacclimated whites do, but they certainly are not exempt from these diseases in this country; and, as far as our own opinion goes, we are strongly inclined to the belief that this so-called exemption has no foundation in fact, and is unworthy of credence.

In order to show that the large number of cases of intermittent and remittent fevers occurring among the freedpeople of this district is not owing to the influence of temporary or local causes, we are permitted, through the courtesy of Surgeon C. W. Hornor, U.S. Vols., Chief Medical Officer of Bureau Refugees, Freedmen, and Abandoned Lands, to give a few extracts from the official reports received from other districts of this Bureau, which will, we think, confirm and strengthen our assertions.

The official monthly report for September, 1865, of the Surgeon-in-Chief of the District of South Carolina (Bureau R. F. and A. L.) for the cities of Charlestown, Beaufort, and Combahee Ferry, and St. Helena Island, is now before us, and from it we extract the following:—

"The total number of sick freedpeople under treatment dur-

ing the month was one thousand and ninety-six, and the number of cases of the above-mentioned diseases was three hundred and ninety-seven, or about forty per cent of the total under treatment."

From a like official report for October, 1865, from the District of Virginia, Bureau R. F. and A. L., for the cities of Yorktown, Petersburg, Hampton, and Eastville, we find the following figures, *viz:*—

"The total number of sick freedmen under treatment during the month, was seven hundred and eighty-eight, and the number of cases of malarious diseases was four hundred and forty-one, or nearly fifty-six per cent of the total number under treatment."

From a similar report for the month of October, 1865, from the District of Georgia, Bureau R. F. and A. L., and for the cities of Macon, Savannah, and Augusta, we extract the following:—

"The number of sick freedmen under treatment during the month was five hundred and eleven, and the number of cases of the above diseases was one hundred and sixty-seven, or nearly thirty-three per cent of the total number under treatment."

We might continue to make extracts similar to the above to an indefinite extent, but we think it to be unnecessary, as all the reports we have seen, and we have consulted a large number with especial reference to this point, give uniformly the same result.

The total number of cases belonging to this class was two hundred and ninety, or nearly four per cent. of the total number of cases treated. This result is somewhat striking, and is diametrically at variance with the extraordinary statements which have been made by some of our medical authors and teachers, and which are to the effect that scrofula (in some form) is almost universally prevalent among the negroes and mulattoes in northern latitudes.

Now, is it undoubtedly true that when the negroes and mixed races are exposed for a lengthened period to the combined evil influences of improper nourishment, insufficient clothing, impure air, and uncleanliness, that they are the victims of the various forms of scrofulous disease; but where well fed and clothed, and subjected to favorable hygienic influences, we are fully persuaded that such is not the case; and we believe that the statements above referred to are entirely mistaken and erroneous. As a proof of this we may cite the fact, that the same causes which produce and perpetuate scrofula among the colored

people, may be seen (to a limited extent) in operation among the poorer classes of white people in many of the larger cities of the Union, and produce among them precisely similar results; in other words, we believe that scrofula is nothing more than the effect produced upon the human system by unfavorable hygienic influences, and any of the races of men will suffer from it in exact proportion as they are subjected to these deleterious conditions.

In this District Bureau of R. F. and A. L. there are now three hospitals open, and eleven physicians employed by the Bureau, who attend them both at the hospitals and at their homes. The number of patients under treatment during each month ranged from eighteen hundred to two thousand for some months past, and if scrofula occurred as frequently among them as has been represented, we think we would have had fair opportunities for observing it. There are many other points of interest connected with the diseases of the freedpeople, on which we might dwell, but the amount of space we have allotted to ourselves in this hasty sketch will not permit us to do so at this time.

Book Notices.

A Manual of the Principles of Surgery, Based on Pathology, for Students. By William Canniff, Licentiate of the Medical Board of Upper Canada; M.D. of the University of New York; M.R.C.S. of England, etc., etc. Philadelphia: Lindsay & Blakiston. 1866.

This is a well-executed octavo volume of 402 pages. As its title and size indicate, it is a manual of surgical pathology, presenting a fair summary of the surgical doctrines of the present time. After the preliminary chapter, on *Nutrition*, the contents of the work are included in five divisions:—

1st. Inflammation, and diseases arising out of inflammation.

2d. The Healing Process, and diseases of the healing process.

3d. External Injuries—Contusions and Wounds.

4th. Diseases of Certain Tissues, Bones, Joints, (including fractures and dislocations,) Arteries, and Veins.

5th. Morbid Growths.

We have not had time to give the work that full reading

which is necessary to enable us to speak critically of its merits, but will endeavor to recur to it at a future time.

Reflex Paralysis: Its Pathological Anatomy and Relations to the Sympathetic Nervous System. By M. Gonzales Echeverria, M.D., Physician to the Charity Hospital, New York: formerly Assistant-Physician to the National Hospital for the Paralyzed and Epileptic, of London, etc. Bailiere & Brothers, New York. 1866.

This is an excellent monograph of 80 pages. The greater part of it originally appeared in a series of articles in the *New York Medical Journal.*

Recent Advances in Ophthalmic Science. The Boylston Prize Essay for 1865. By Henry W. Williams, M.D., Ophthalmic Surgeon to the City Hospital, Boston; University Lecturer on Ophthalmic Surgery, in Harvard University; etc., etc. Ticknor & Fields. Boston. 1866.

This is an elegantly published volume of 166 pages. The title sufficiently indicates the interesting and important nature of its contents; while the reputation of its author and the award of the prize committee are a sufficient guarantee that the topics are well presented.

Asiatic Cholera: Its Origin and Spread in Asia, Africa, and Europe; Introduction into America through Canada; Remote and Proximate Causes, Symptoms, and Pathology, and the Various Modes of Treatment Analyzed. By R. Nelson, M.D., Health Commissioner during the first two invasions, 1832-4; President of the Medical Board for the District of Montreal. W. A. Townsend, Publisher, New York. 1866.

This is a duodecimo volume of 206 pages. Its copious title page sufficiently indicates its contents. Those who wish to accumulate all the current literature on the subject of cholera will procure the present work. But we cannot approve of the author's views, either in relation to the pathology or treatment of the disease of which he treats.

Asiatic Cholera. By F. A. Burrall, M.D. Wm. Wood & Co., 61 Walker Street, New York. 1866.

This is a duodecimo of 155 pages, neatly printed, and contains a summary of the prevalent doctrines relating to the communicability, symptoms, and treatment of cholera. We

have failed to find in it any substantial additions to the stock of knowledge previously accessible to the profession.

Diarrhœa and Cholera: their Origin, Proximate Cause and Cure, through the Agency of the Nervous System, by Means of Ice. By John Chapman, M.D., M.R.C.P., M.R.C.S. J. B. Lippincott & Co., Philadelphia. 1866.

This is a pamphlet of 57 pages, devoted to the advocacy of ice bags to the spine, as the leading remedial agent in the treatment of cholera.

Editorial.

Chicago Medical College.—We have received the Eighth Annual Announcement of this institution, and take pleasure in calling the attention of our readers to it. It gives a plain statement of the organization of the college; its course and plan of instruction; its clinical advantages; terms for graduation; list of students in attendance the preceding year; and the number of students and graduates in each year since its organization.

Some changes have taken place in the faculty since the last annual announcement. Prof. H. A. Johnson, one of the founders of the college, who had most ably filled, in succession, the Chairs of Physiology and Histology, and of General Pathology and Public Hygiene, has been constrained, by continued ill-health, to resign his position as an active teacher in the college. We regret this, because Prof. Johnson was one of the most thorough, eloquent, and instructive lecturers in our profession. Prof. Henry Wing has also resigned the Chair of Medical Jurisprudence. The Chair of Physiology and Histology, made vacant by the resignation of Prof. Johnson, has been filled by the appointment of Dr. John M. Woodworth, of this city, now on a visit in Europe. The Chair of Medical Jurisprudence has been filled by the appointment of Dr. R. J. Patterson, of this city, but extensively known throughout the North-west from his connection with institutions for the insane.

Dr. PATTERSON's attainments and previous professional career have eminently qualified him for his present position.

The next regular lecture term commences on the first Monday in October, and continues until the first Tuesday in March, following.

There are three things connected with the Chicago Medical College, to which the attention of the profession is specially directed:—First, its regular annual lecture term is five full months, with a supplementary recitation and clinical term of four months. Second, its clinical facilities and requirements; not only making hospital clinical instruction in medicine and surgery a prominent part of its daily instruction, but making attendance thereon a positive condition for graduation. In this department, the Chicago Medical College is as intimately connected with the Mercy Hospital as the Bellevue College, in New York, is with the Bellevue Hospital. Third, its increased number of professorships, with the division of the several branches into two groups, designated as junior and senior departments or courses, by which the students are arranged into junior and senior classes, and are thus enabled, each term, to confine their attention to a limited number of topics, and have their successive courses progressive instead of merely repetitional. In the practical adoption of this important principle, so long familiar and regarded as essential in all other departments of education, this college has stood alone among the medical schools of this country for the past six years. It is yet the only medical college in the country in which the student attending his first course is required to attend thoroughly to the more elementary branches of medical science, and to be examined on the same before advancing to his second or senior course. The principle lies at the foundation of all important improvements in the system of medical college instruction in our country. We are glad to see that it is, finally, attracting some attention in influential quarters. In a recent number of the *Medical Record*, of New York, the editor very properly and forcibly advocates the full adoption of this principle with a longer lecture term, by all the medical schools.

Proceedings of the Illinois State Medical Society.—We have received letters from members of the Adams Co. Medical Society, complaining that the record of the proceedings of the recent meeting of the State Medical Society, as published in the July numbers of the medical journals of this city, is incorrect, so far as relates to the communication from that Society and the action of the State Society thereon.

According to these letters, the *record* should have said that a communication was received from the Adams County Medical Society, protesting against the propriety of admitting into the State Society delegates from the "so-called Quiney Medical Society;" that the same was referred to a committee; that the committee reported a resolution declaring that the said "so-called Quincy Medical Society" was not entitled to representation, on account of its being composed in part of members who had been previously expelled from the County Society; and that this resolution was adopted. We give the proposed correction of the *record* the same publicity as the *record* itself.

In regard to the publication of the proceedings and papers read at the late meeting of the State Society and referred to the Committee of Publication, as Secretary, we feel some doubts in regard to our duty in the matter. As the representative of the Committee of Publication and Permanent-Secretary of the Society, we sent a communication to the late annual meeting, making certain recommendations in regard to the future publication of the transactions. This was referred to a committee, consisting of three prominent members of the Society, who reported adversely on our recommendations, and, after considerable discussion, both the communication and the report of the committee were laid on the table and left there, without any definite action whatever.

Chicago Medical Society.—Three or four of the recent weekly meetings of this Society have been occupied chiefly in discussing matters of ethics, and, consequently, have furnished less matter worthy of record than usual. At the meeting on the evening of the 29th of June, some interesting cases were

reported verbally by Drs. Reid, Orrin Smith, and Wanzer, which were discussed until a late hour. At the meeting on the evening of the 6th of July, a committee reported that Dr. Jonathan W. Brooks had been proved guilty of unprofessional conduct, in relation to other members of the profession, and he was expelled from the Society.

European Medical News.—This is the title of a new monthly medical periodical, that Dr. Robert Stone, of New Haven, Ct., proposes to publish, as soon as a sufficient number of subscribers can be pledged to justify the undertaking. The object of Dr. Stone is, not to publish an ordinary medical journal, but a faithful abstract, monthly, of the principal medical and surgical journals of *Continental Europe*. Its size will be not less than fifty pages per month, and its price five dollars a-year. The object is a good one, and we hope it will meet with abundant success.

SULPHITES IN MALARIAL FEVERS.

Moscow, Iowa, *July 18, 1866.*

Prof. N. S. Davis, M.D.:—

Dear Sir:—My attention being called to an article in the *American Journal of the Medical Sciences*, April No., 1866, on the remedial power of the Hypersulphite of Soda in intermittent and remittent fevers, and their analogous affections. The theory of the fermentation of the blood:—and knowing that the hypersulphite was a powerful anti-ferment, I was induced to give it a trial. Perhaps no country practitioner has used it more extensively than I, and, therefore, I only give my experience in the remedy. In the last month, I have treated over one hundred cases of simple intermittent and remittent fever with this remedy alone, and in no case has there been an exacerbation after taking the remedy a reasonable length of time. I give it in 15 gr. doses, in solution with water. I have not trusted to this remedy alone in pernicious or malignant types.

Yours truly,

W. H. BAXTER, M.D.

PHYSICIAN'S REPORT OF ST. LUKE'S HOSPITAL, FROM OCTOBER 18TH, 1865, TO MARCH 31ST, 1866.

Number of patients remaining Oct. 17th, 1865,	13
" " admitted from Oct. 18th, to March 31st,	55
Total treated,	68
Number discharged,	54
" of deaths,	3
" patients remaining April 1st,	11

SEX, NATIONALITY, AND RELIGIOUS DENOMINATION OF THOSE TREATED.

Males,	39	Females,	29
Bohemia,	1	Norway,	1
Canada,	8	Nova Scotia,	1
England,	8	Sweden,	1
Germany,	5	United States,	21
Ireland,	19	Unknown,	3
Baptists,	3	Methodists,	3
Catholics, (Roman,)	27	None,	9
Episcopalians,	18	Presbyterians,	4
Lutherans,	2	Unknown,	2

CASES TREATED.

Abrasions of Scalp,	1	Fracture, Tibia,	1
Abscess, Poplitæal,	1	" neck of Femur, Impacted,	1
Adhesions, Pleuritic,	1	" Tibia & Fibula, Compound,	1
Albuminuria,	1	Gastritis, Chronic,	1
Anæmia,	1	Hypertrophy of Heart,	1
Anthrax,	1	Inflammation of Cervix Uteri,	1
Bronchitis, Acute,	1	Lying-in Cases,	18
" Chronic,	1	Marasmus—Senilis, with Diarrhœa,	1
Cancer of Inguinal Glands, Scirrhus,	1	Periostitis of Foot, Traumatic,	1
" Pancreas, Encephaloid,	1	" Syphilitic,	1
Caries of Finger,	1	Phthisis,	2
Cerebro-Spinal Meningitis,	1	Pneumonia, Double,	1
Congestion, Renal,	1	Rheumatism, Acute,	3
Debility,	2	" Chronic,	1
Diarrhœa, Chronic,	3	Stricture, Rectal,	1
Dislocation of head of Humerus,	1	Ulcer, Varicose,	3
Dysmenorrhœa,	1	Varix,	2
Ecthyma,	1	Variola, transferred to pest-house,	1
Eczema,	1	Caries of Sternum, (eloped without treatment,)	1
Fever, Typhoid,	3		
" Intermittent,	2		

CAUSES OF DEATH.

Cerebro-Spinal Meningitis,	1
Fever, Typhoid,	1
Marasmus—Senilis, with Diarrhœa,	1
Total,	3

There have been three still-births. One, the result of the mother's falling a short time before admission. In the second case, craniotomy was performed, owing to the deformity of the mother and the unusually large size of the child. In the third case, the labor was complicated with puerperal convulsions. The child was delivered by turning. The mother made a good recovery.

JNO. E. OWENS, M.D., *Physician in charge.*

Mortality for the Month of June.—The mortality report for the month of June, as compiled by the health-officer, is given below. The statistics show an increase of 126 deaths over the corresponding period of last year. The increase appears to be principally confined to accidents, consumption, convulsions, and those patients under the age of 5 years appear to have made up the greater percentage. There is no epidemic in the city, and no cases of small-pox have appeared for many months.

CAUSES OF DEATH.

Accidents,	12	Fever, Congestive,	3
Asthma,	1	Fever, Remittent,	4
Apoplexy,	2	Fever, Scarlet,	14
Abscess,	2	Fever, Typhoid,	13
Bronchitis,	1	Hemorrhage,	1
Cancer,	3	Hydrocephalus,	5
Childbed,	3	Inflammation of Brain,	7
Colds,	1	Inflammation of Bowels,	7
Congestion of Brain,	6	Inflammation of Lungs,	8
Congestion of Lungs,	3	Intemperance,	2
Cholera Infantum,	4	Lockjaw,	2
Consumption,	14	Marasmus,	2
Convulsions,	26	Measles,	18
Croup,	9	Meningitis,	1
Diarrhœa,	3	Old Age,	12
Diphtheria,	4	Paralysis,	1
Disease of Bowels,	1	Poisoniug,	1
Disease of Heart,	5	Phthisis Pulmonalis,	5
Disease of Liver,	2	Stillboru,	15
Disease of Throat,	2	Scald,	1
Disease of Spine,	2	Suicide,	1
Disease of Brain,	4	Teething,	11
Disease of Lungs,	3	Tuberculosis,	3
Dropsy,	7	Tumor,	1
Drowned,	11	Whooping-Cough,	6
Dysentery,	6	Unknown,	41
Erysipelas,	2		
Fever, Childbed,	3	Total,	319

Ages of the Deceased.—Under 5 years, 165; over 5 and under 10 years, 21; over 10 and under 20, 15; over 20 and under 30, 29; over 30 and under 40, 25; over 40 and under 50, 21; over 50 and under 60, 14; over 60 and under 70, 8; over 70 and under 80, 6; unknown, 15. Total, 319.

NATIVITIES.

Chicago,	157	Canada,	1	Poland,	1
Other States,	52	Ireland,	43	Unknown,	9
England,	5	Scotland,	5		
Germany,	39	Sweden,	4	Total	319
Denmark,	1	Norway,	8		

DIVISIONS.

North,	94	South,	81	West,	131
Country,	5	Unknown,	1	Total,	319

Biographical Dictionary.—Dr. J. M. Toner, of Washington, D.C., is engaged in the preparation of a biographical dictionary of deceased American physicians. We think him eminently qualified for the performance of the task he has undertaken, and hope the profession in all parts of the country will communicate to him freely all such facts as he needs, and such patronage as will reward him for attempting to do justice to the dead.

PREVENTION OF CHOLERA.

At a recent meeting of the New York Academy of Medicine, the following preamble and resolutions were unanimously adopted.

Without regarding them as authoritatively settling any questions of a controversal character in relation to the etiology of cholera, we cheerfully give them a place in our columns, and ask for them a careful reading:—

PREAMBLE AND RESOLUTIONS.

Whereas, The New York Academy of Medicine has endeavored to promote among its own members, and throughout the medical profession, a spirit of exact and practical inquiry into the preventive and remedial treatment of epidemic cholera; therefore, be it

Resolved, That this Academy hereby expresses its confidence in the utility of general and specific hygienic measures as the best means of protection against the pestilential prevalence of cholera in any locality where it makes its appearance; and that the most thorough scavenging, cleansing, and disinfection are absolutely necessary means of averting this pestilence in the cities and populous towns of our country at this present time.

Resolved, That in the judgement of the Academy the medical profession throughout this country should, for all practical purposes, act and advise in accordance with the hypothesis (or the fact) that the cholera diarrhœa and "rice-water discharges" of cholera patients, are capable, in connection with well-known localizing conditions, of propagating the cholera poison; and that rigidly enforced precautions should be taken in every case of cholera to permanently disinfect or destroy those ejected fluids by means of active chemical agents; also that with the same object in view, the strictest cleanliness of person and

premises should be enforced upon all who have charge of the sick; also, that all privies, water-closets, and cess-pools should be kept thoroughly under the control of disinfectants.

Resolved, That we regard the nature and causes of cholera infection, so far as the sick or their discharges can propagate it, as being so susceptible of control that there should be no fear or hesitancy in the personal care of the sick and all that pertains to them.

Resolved, That immediate and thorough cleansing and disinfection of all persons, clothing, and things that have been exposed to the discharges or persons of the sick with cholera constitutes the chief end and object of any rational quarantine or external sanitary police regulation against cholera.

Resolved, That, for the purposes here mentioned, and external sanitary police is desirable in all great maritime and river towns, but that such sanitary regulations need not seriously embarass commercial intercourse and the interests of trade.

Resolved, That the main source of protection against epidemic cholera at the present time is to be found in the vigilant and effective operation of sanitary measures, municipal, domestic, and personal.

Resolved, That the New York Academy of Medicine cordially invites the physicians of every city and village through our country to urge the immediate adoption of adequate measures of sanitary protection against the introduction and ravages of cholera, and that to this end we pledge our brethren and the public the hearty and continued coöperation of this Academy.

Stevens Triennial Prize.—A Prize Fund of one thousand dollars has been established by Alexander H. Stevens, M.D., Ex-President of the College of Physicians and Surgeons, New York, for the improvement of Medical Literature, on the following plan:—

Each Prize to be awarded triennially is to consist of the interest yielded by the principal fund during the previous three years, and will amount to about two hundred dollars.

The administration of the Prize is intrusted to a commission, consisting of the President of the College of Physicians and Surgeons (*ex-officio*), the President of the Alumni Association (*ex-officio*), and the Professor of Physiology (*ex-officio*), in the same institution.

The following subjects have been selected, at the request of Dr. Stevens, for the first triennial Prize under this fund:—

1st. The best means of preventing death after surgical accidents.

2d. The history of improvements in the medical art, and the means by which they are attained.

The competing essays on either of the above subjects must be sent to the President of the College of Physicians and Surgeons, New York, on or before the first day of January, 1869. Each essay must be designated by a device or motto, and must be accompanied by a sealed envelope bearing the same device or motto, and containing the name of the author.

The envelope belonging to the successful essay will be opened and the name of the author announced at the annual commencement of the College in March, 1869.

This Prize is open for universal competition.

Edward Delafield, M.D., President of the College of Physicians and Surgeons.

Alfred C. Post, M.D., President of the Alumni Association of the College of Physicians and Surgeons.

J. C. Dalton, M.D., Professor of Physiology in the College of Physicians and Surgeons.

Annual Prizes of the Imperial Academy of Medicine.—These were announced on the 12th December last. The Academy prise of 1000 *francs* was adjudged to Dr. Martin, its subject being Traumatic Paralysis. Baron Portal's prize of 1000 *francs*, "On the Specific Anatomical Characters, if there be any, of Cancer," was gained by M. Cornil. There were six competitors for Madame de Civrieux's prize of 1000 *francs*; the question being, The Relations between General Paralysis and Madness." M. Magnan took the prize. Capuron's prize of a like value, "The Pulse in the Puerperal State." was not adjudged. An encouragement, however, of 600 *francs* was given to M. Hemey, one of three competitors. Baron Barbier's impossible prize of 8000 *francs*, for a cure of incurable diseases, found seven candidates. A prize of 7000 *francs* was adjudged, as the nearest approach to the programme, to M. Chassaignac, as author of "Ecrasement Linéaire." M. Amussat's prize of 2000 *francs* found four candidates, but no takers; but recompenses were given to two of them. Eight works were sent in for Godard's prize of 1000 *francs*; but the Academy gave only two recompenses.—*British Medical Journal.*

Obituary Record.—Died, in Boston, June 21, 1866, Reuben D. Mussey, aged eighty-six. Dr. Mussey was one of the most eminent Surgeons of New England, and was for many years Professor of Surgery in Dartmouth Medical College, in

his native State. About the year 1838 he removed to Cincinnatti, Ohio, and was appointed Professor in the Miami Medical College, which he held until some ten years ago. He communicated a number of very valuable papers to the *American Journal of the Medical Sciences*, among others one on fractures of the neck of the thigh-bone within the capsular ligament.

At Jaffa, whither he had gone on one of those missions of love and mercy in which he delighted, on the 5th of April, Thomas Hodgkin, aged 68. Dr. H. was a physician of great talent, was a fine scholar, an accomplished linguist, and a warm-hearted philanthropist.

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Surgeon to the New England Hospital for Women, and Professor of Obstetrics and the Diseases of Women in Berkshire Medical College.

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PRIZE ESSAY.

The Indiana State Medical Society, through its Committee on Prize Essays, offers a premium of the value of ONE HUNDRED DOLLARS to the Physician, resident within the State, who shall present the best, and an acceptable, dissertation upon any subject of professional interest.

Competitors for the prize must send their essays to Jas. F. Hibberd, M.D., Chairman of the Committee, Richmond, Ind., free of all expense, on or before the 1st of April, 1867. Each essay must be accompanied by a sealed packet, containing the author's name and address. On the sealed packet must be inscribed some device, motto, or sentence, and the same device, motto, or sentence must be inscribed on the essay.

The successful dissertation will be the exclusive property of the State Medical Society. The unsuccessful dissertations will be left with the Secretary of the Society, and may be obtained by their respective authors at any time within a year.

JAMES F. HIBBERD, Richmond. Ind.,
H. P. AYRES, Fort Wayne, Ind.,
WM. B. FLETCHER, Indianapolis, Ind. } Com. on Prize Essay, Ind. State Med. Soc.

June, 1866. 8

BELLEVUE HOSPITAL MEDICAL COLLEGE,

CITY OF NEW YORK.

SESSIONS FOR 1866-'67.

THE Faculty take pleasure in referring to the cumulative evidence afforded by the success of this College, in behalf of the importance of the union of clinical and didactic teaching. The class in attendance during the Session of 1865-6 numbered 170, the number of graduates being 172. The new building within the hospital grounds affords ample accommodations.

The Faculty have instituted a Summer Session, beginning on the first of April 1867, and ending in the following July. This Session will embrace didactic and clinical lectures. HENRY D. NOYES, M.D., has been appointed Professor of Ophthalmology in the Summer Faculty; J. LEWIS SMITH, M.D., Lecturer on Morbid Anatomy, and FOSTER SWIFT, M.D., Lecturer on Diseases of the Skin. Professor W. H. VAN BUREN, M.D., has been appointed to a newly created Professorship of the Diseases of the Genito-Urinary System. Professors DOREMUS, ELLIOT, and FLINT, Jr., will, in addition to the foregoing, take part in the Summer Session. A further account of this Session, with the fees and regulations, is contained in the annual circular for 1866-7.

The usual preliminary Autumnal Session will commence on Wednesday, Sept. 12, 1866, and continue four weeks. Instruction during this term will, as hitherto, consist of didactic lectures on special subjects, and daily clinical lectures. The lectures in this term are given exclusively by members of the Faculties. The regular Winter Session will commence on Wednesday, October 10, 1866, and end about the first of March, 1867.

FACULTY OF THE COLLEGE:

ISAAC E. TAYLOR, M.D., President.

AUSTIN FLINT, JR., M.D., Secretary.

JAMES R. WOOD, M.D., Professor of Operative Surgery and Surgical Pathology.
FRANK H. HAMILTON, M.D., Professor of Military Surgery, Fractures and Dislocations, and the Principles of Surgery.
LEWIS A. SAYRE, M.D., Professor of Orthopedic Surgery.
ALEXANDER B. MOTT, M.D., Professor of Surgical Anatomy.
W. H. VAN BUREN, M.D., Professor of Diseases of the Genito-Urinary System.
ISAAC E. TAYLOR, M.D.,
GEORGE T. ELLIOT, M.D., } Professors of Obstetrics and Diseases of Women and Children.
FORDYCE BARKER, M.D.
BENJAMIN W. MCCREADY, M.D., Professor of Materia Medica and Therapeutics.
STEPHEN SMITH, M.D., Professor of Descriptive and Comparative Anatomy.
AUSTIN FLINT, M.D., Professor of the Principles and Practice of Medicine.
R. OGDEN DOREMUS, M.D., Professor of Chemistry and Toxicology.
AUSTIN FLINT, JR., M.D., Professor of Physiology and Microscopy.

N. R. MOSELY, M.D., Demonstrator of Anatomy.
J. W. SOUTHACK, M.D., Assistant Demonstrator of Anatomy and Prosector to the Chair of Operative Surgery and Surgical Pathology.
A. W. WILKINSON, M.D., Assistant to Chair of Chemistry and Toxicology.
HENRY G. PIFFARD, M.D., Assistant to Chair of Principles and Practice of Medicine.
LUCIEN DAMAINVILLE, M.D., Assistant to Chair of Military Surgery, etc., etc.

Fees for tickets to all the lectures during the Autumnal and the Regular Winter Session*	$140 00
Tickets for any of the several departments may be taken out separately.	
Matriculation Fee	5 00
Demonstrator's Ticket	10 00
Graduation Fee	30 00

Students who have attended two full courses in other accredited schools receive all the tickets for $70, exclusive of the Matriculation Fee. Students who have attended two full courses in this College, or after one full course in this College, having previously attended a full course in some other accredited schools, are required to matriculate only. Graduates of other accredited schools, after three years, dating from the time of graduation to the end of the term, are required to matriculate only; prior to three years they receive a general ticket for $70.

Payment of Fees is invariably required at the commencement of the Session. There are no exceptions to this rule.

Students on arriving in the city are requested to report at once at Bellevue Hospital, situated on the East River, between 26th and 28th Streets, and inquire for the Janitor of the College, who will take pains to aid them in securing comfortable accommodations without delay. Entrance to the Hospital is on 26th Street.

For the annual Circular giving further information, address the Secretary of the Faculty, Prof. AUSTIN FLINT, Jr., Bellevue Hospital Medical College.

* The fees in this College are raised in common with the Colleges of New York and Brooklyn, Philadelphia and Boston.

THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., Editor.

VOL. VII. SEPTEMBER, 1866. NO. 9.

Original Contributions.

ARTICLE XXX.

PRACTICAL REMARKS ON BLOOD-LETTING.

[CONCLUDED.]

By D. B. TRIMBLE, M.D., Chicago, Ill.

In many of the diseases of the *urinary* and *genito-urinary* organs, blood-letting is required.

In several of the diseases of the *kidneys*, it is very necessary.

In *acute nephritis*, if the patient is of vigorous constitution, and the attack scvere, free general and local bleeding is necessary; but in milder cases, and in pyelitis, local blceding is generally sufficient. Prout and Wood recommend this course. But not only in simple nephritis, but in inflammation of the kidneys in a previously diseased or degenerated state, especially if in an hæmotrophied condition, should also be "promptly met at the very outset by active antiphlogistic treatment. A few cases will require general blood-letting, and almost all will be benefited by local depletion; such as by cupping or leeching over the loins, etc." [Prout.] When the inflamed degenerated kidney is in the anæmotrophied condition, the same author remarks that general depletion must be more cautiously used; and cups or leeches applied over the loins, or leeches to the perineum or anus, will often be of great service. Roberts, in his work on "Urinary and Renal Diseases," recommends

venesection in those cases of renal calculi accompanied by a "highly sthenic condition;" and cupping or leeching the lumbar region in those cases, and also in active congestion of the kidneys; in passive congestion, when produced by a temporary cause, as pregnancy, etc.; in suppurative inflammation, and in pyclitis.

In *nephralgia*, if accompanied by tenderness of the loins, cupping or leeching that region will sometimes be attended by relief.

Ischuria renalis, or suppression of urine, is occasionally, though but seldom, an idiopathic affection. When idiopathic, or when symptomatic, if caused by acute nephritis, or vascular irritation of the kidneys, or is attendant upon acute inflammation of other organs, or idiopathic fevers, blood should be freely taken from the arm, and the loins cupped. If owing to calculi in the pelves of the kidneys, or in the ureters, the same remedies, with a view to relaxation, as well as to subdue inflammation, may be required. When dependent upon cerebral or spinal disorder, cups or leeches should be applied to the base of the cranium, or to the vertebræ. When occurring in the latter stages of albuminuria, or in disorganization of the kidneys, or in Asiatic cholera, it would be useless and improper.

Of *Diabetes*, I can say but little from personal experience, as I recollect having seen but one well-confirmed case, in a girl 8 years of age, and which proved fatal. ROBERTS makes no observations on depletion in this disease; but PROUT remarks: "In cases of recent occurrence, and of an acute character, there cannot be a doubt about the propriety, and even necessity of blood-letting; which may be repeated as often as the circumstances of the case may seem to require. In very protracted cases, however, occurring in old subjects, and, indeed, wherever the debility is excessive, this remedy can be seldom required; though even in such cases it has been shown that blood-letting can be borne much better than could be expected. In most cases, frequent local bleedings from the epigastric region have been found beneficial; particularly when an extraordinary sense of fulness, heat, or tenderness has been experi-

enced about the region of the stomach." Professor WOOD says that one of the indications for treatment is, "to alter the condition of the blood itself, which is probably the direct source of much of the functional and organic derangement which marks the progress of the disorder." This condition of the blood, he believes to be caused "by the loss of its water and salts through the kidneys, as well as by the imperfect assimilation of the nutriment thrown into it, the blood becoming depraved, and having an excess, probably, of the fibrinous and coloring ingredients." "Bleeding is the best palliative for this state of the blood. It tends to restore the equilibrium of the constituents; for the place of the blood abstracted is supplied with water and salts in larger proportion than with the animalized products. Nor does it materially weaken the patient. The vigor of the appetite, and the nutritious character of the food used, serve to obviate this result. The consequences are great relief to the uncomfortable feelings of the patient, a diminution of any inflammatory symptoms that may exist, and a reduction in the quantity of the urine." He then gives the same precautions in regard to its use that PROUT does.

In *hydruria*, or *simple diuresis*, venesection is seldom required; though where there is pain in the back, cups or leeches applied to the loins will often afford relief. I have had under my care, for six months past, a gentleman, 78 years of age, affected with severe diuresis, but in whose urine I could detect no trace of albumen, though several times subjected to the proper tests. His general health is much improved, pain entirely relieved, and the discharge of urine diminished, though still too great. Though suffering at first, and for some weeks, severe pains in the loins, and spasmodic pains in the neck of the bladder, I did not resort to local depletion, his age and debility precluding it. Narcotics and warm emollient applications, with infusions of uva ursi, or buchu, gradually relieved these symptoms; and tonics, carb. ammonia, and a generous diet are restoring him.

Bright's disease of the kidneys.—This term includes several pathological states of the kidneys, as albuminuria, different

inflammatory conditions, and different kinds of degeneration; but ROBERTS, one of the latest authorities on renal diseases, classifies them, from a clinical point of view, as "acute and chronic Bright's disease." "The former embraces a compact and uniformly recognized group, which formerly went under the name of inflammatory dropsy." The latter includes the protracted cases, which he divides into three types. In acute cases, if seen at the "time of invasion," he recommends that the loins should be cupped to the amount of 8 or 12 ounces, to be repeated if there is severe headache, coma, or convulsions. In very severe cases, of the sthenic type, and high fever, venesection is required. In the young, the robust, or the temperate, PROUT recommends both general and local depletion; but in the intemperate, the debilitated, or the aged, local depletion only; or, in a few cases, general bleeding, moderately. WOOD, also, gives similar advice. In the chronic form, cupping or leeching the loins is recommended.

Bladder.—In *acute cystitis*, venesection, and leeches applied to the pubic or perineal regions, are indicated. In chronic cystitis, or *cystorrhœa*, the application of leeches is generally all that is required for direct depletion. In *irritable bladder*, if the patient is robust, and there is a sthenic condition of system, moderate venesection, or cupping the loins, or leeching the perineum may be beneficial; but as the disease generally occurs in the aged, it is seldom proper to resort to these measures. In *spasm of the bladder*, or *retention of urine*, when produced by an inflammatory condition of the organ, general and local bleeding is called for; and in robust persons, for spasm, venesection may also be practised, with a view to its relaxing effect, when there are no symptoms of inflammation.

In *prostatitis*, the same measures are applicable.

In *orchitis*, if the patient is young and robust, venesection, and repeated leeching of the scrotum, are indicated. Since writing the above, I have had a case of acute inflammation of the testicle, in a married man, of about 35 years of age, of correct moral habits. The testicle and scrotum were considerably enlarged and inflamed, and the former painful. There was no

apparent cause for it. I gave him saline purgatives, a local application of liq. plumb. sub-acet., and directed him to live on a light farinaceous and vegetable diet, and rest in the recumbent position. In one week, the inflammation had disappeared. I had a case, a few years ago, in a colored man, of enormous enlargement of both testes, from simple inflammation, without any syphilitic taint. When I first saw him, he had been sick about two weeks, and the scrotum was in a state of ulceration. The entire anterior portion of the scrotum sloughed off, completely exposing the testicles. He recovered after a tedious illness. In *sarcocele*, when either simple or scrofulous, and in *circocele* and *varicocele*, leeching the scrotum, or scarifying the veins, will often afford relief. In *hæmatocele*, if produced by rupture of the spermatic vein, and if the patient is young and not prostrated, venesection should be resorted to, and leeches applied, in case of inflammation of the scrotum after an operation.

Hysteritis may appear in the non-gravid womb, or as a sequel to parturition. In either case, venesection and local bleeding are necessary, but generally more promptly and freely in the latter than in the former case, on account of its greater activity and danger. The local bleeding may be accomplished by the application of leeches to the perineal, iliac, or sacral regions. BURNS, RAMSBOTHAM, MEIGS, and other good authorities recommend this treatment, and my own experience confirms it. In the earlier stages of *scirrhus*, or *cancer of the uterus*, "taking blood from the loins by cupping, or from the pubis or groins by leeches, is of service" to allay the throbbing, heat, or pain.

In *amenorrhœa*, if produced by vascular irritation of the uterus, accompanied with general plethora, pain in the back or head, and fever, venesection should be resorted to; and in *dysmenorrhœa*, the same conditions being present, leeching the pubis or perineum. In *leucorrhœa*, where there is a plethoric condition of system, venesection or leeching will be beneficial.

In diseases of the serous membranes terminating in *dropsy*, blood-letting is sometimes of great benefit; is, indeed, sufficient

of itself, sometimes, to effect a cure. When caused by suppressed perspiration; from cold; or by the suppression of other secretions, as the menstrual; or by the vascular fulness attendant npon pregnancy; or from febrile, or local inflammatory affections; and attended by fever, or a full and tense pulse in persons of good constitution, and not too far advanced in age, venesection may be practised with benefit, with the view to diminishing the irritation of the secreting membranes; and, by relieving the fulness of the bloodvessels, promoting absorption of the effused fluid. If the blood exhibits the characteristic marks of inflammation, the bleeding may be repeated, but not frequently. The great majority of cases of dropsy do not require, and will not bear this remedy; but, when applicable, it sometimes acts with very prompt and beneficial influence. Where the serous membrane of any portion of the system is inflamed, topical depletion may be resorted to, cups being preferable to leeches. Where there is a torpid condition of the brain in general dropsy, cups to the temples or nucha may relieve temporarily. In hydrothorax, in its various forms, whether the effusion be in the parenchyma of the lungs, the pleuræ, or pericardium, cupping over the affected region will, sometimes, alleviate the symptoms; and in ascites, or in encysted ovarian dropsy, cups to the abdominal or pelvic regions will have a similar effect.

In *rheumatism*, if *acute*, bleeding may generally be practised with benefit. Persons affected with this form of the disease are, mostly, those in the vigor of life, of robust constitutions, and bear depletion well. The disease is almost always accompanied by fever of an active grade; and the pulse is full, frequent, and tense. One or two free bleedings, however, are all that is usually required; nor can we expect to permanently reduce the pulse by this means, without employing it to a dangerous extent. Too frequent bleedings have been supposed, in some cases, to cause metastasis to internal organs, especially to the heart, thus producing dangerous, sometimes fatal results. If this translation should take place in the course of the disease, not from the effects of bleeding, then venesection should

be used as far as the system will bear it, followed, if the heart is involved, by cups between the shoulders, or to the left thoracic region; if the brain, by leeches to the temples, nucha, or scalp. In sub-acute, or chronic rheumatism, bleeding is seldom requisite.

Dr. FULLER, (of London,) in his work on "Rheumatism," by his extreme caution, almost ignores blood-letting in this disease; though, in cases occurring in the young and robust, and for the first time, he admits that one small bleeding may be useful. Even in rheumatic endo-carditis, or peri-carditis, or where the brain, lungs, or pleuræ are affected, he is not much more favorable to it, although he admits that local bleeding, especially leeching, may sometimes have a beneficial effect. In opposing the practice of BOUILLAUD, that of large and frequently repeated bleedings, he errs on the other hand, though not to so great an extreme. In this assertion, I think the experience of those who have had to treat acute rheumatism frequently, will support me, as my own certainly does.

Bleeding has no direct influence in the cure of *gout*, and should only be resorted to when the disease attacks some vital organ, as the heart, stomach, lungs, etc., when prompt and efficient venesection is sometimes required to save life. Nor must we be always guided by the state of the pulse, for though when full and strong there can be little doubt of its propriety, yet, sometimes, the depression is so great that the pulse becomes feeble and contracted, and the strength reduced. In the latter event, the flow of blood will sometimes be accompanied by an increased volume and firmness of the pulse, and the urgent symptoms be alleviated. After general bleeding, if the symptoms are not conquered, topical depletion over the affected organ may be used with benefit.

In the treatment of *idiopathic* fevers, blood-letting is of great benefit, sometimes indispensable. Under this head, I shall only consider those fevers that are unaccompanied by eruptions, leaving the latter to be treated of under another caption. There is a fever which I have sometimes witnessed, brief, often ephemeral, in duration; occurring most frequently in children;

easily relieved, and rapidly convalescing. It is the same, probably, as that described by Dr. Wood, under the name of *irritative fever*. If in an adult, and the fever should be very high, with a full, strong pulse, severe headache, and tendency to cerebral congestion, one full bleeding from the arm may be requisite, but is not often necessary. I have had a case, within the last two weeks, in a young man, where there was a full and frequent pulse, hot skin, and flushed face, but with little headache. An active saline cathartic, followed by a cooling diaphoretic, which produced free perspiration, relieved him, and in 48 hours he was convalescent. In children, where convulsions are induced, and a similar condition of system pertains, leeches to the temples may be proper; but many of those cases of convulsions are occasioned by nervous disturbance alone, and then this remedy is not indicated.

In *miasmatic fevers*, direct depletion is not very frequently required. The indications for its use are, when the system is in a sthenic condition; the pulse full and tense, in the hot stage; and there is danger of inflammation of some internal organ, as the brain, stomach, liver, or lungs; or where the vomiting is incessant, and cannot be otherwise controlled. In the cold stage, when apoplectic symptoms occur, it may also be necessary. These remarks apply to each variety, the intermittent, the remittent, or congestive types, but more especially to the remittent. "Topical bleeding is of very great service, and of very general application. There are but few cases probably in which it may not be beneficially applied." [Bartlett's "Fevers of the U.S." The author's views in relation to bleeding in fevers, sustain the position taken in this article.] Where there is a tendency to inflammation of any of the vital organs, leeches or cups should be applied in the vicinity of such organ.

Yellow fever is a disease of such rare occurrence in this latitude, that a knowledge of its treatment is not of such importance as that of fevers of a milder type; yet, it may occur to others, as it has to myself in a solitary instance. In that case, I was embarrassed in my diagnosis, until I had the assistance of an old physician of Philadelphia, who was familiar with yellow

fever, and who pronounced it to be that affection. This being my limited experience, I prefer to give that of others in regard to its treatment. Prof. WOOD says:—"The question must be decided at an early period, whether it will be requisite to use the lancet." "It is generally considered a hazardous remedy, after the lapse of one or two days. Bleeding will not *cure* the disease, nor should it be used vaguely, with this view. The only legitimate indication for it is to diminish the danger of disorganization from the violence of inflammatory excitement. If carried too far, it may do immense harm, by increasing the prostration of the second stage. It should be resorted to only when the pulse is tense and full. When this is very frequent, or readily compressible, the lancet should not be employed." "In the great majority of cases, it will not be necessary to bleed at all." In the case under my care, bleeding was not resorted to. When the yellow fever prevailed in Philadelphia, in 1794, the most eminent physicians there, Drs. RUSH, PHYSIC, DEWEES, and others, bled freely. In the years 1828, '29, and '30, experiments were made on some of our national vessels in the West Indies and Gulf of Mexico, to test the comparative merits of the antiphlogistic and mercurial treatments, and the result was greatly in favor of the former, in which venesection was almost invariably practised. Yet, the opinion of eminent physicians of the present day, who have had much experience in the disease, is adverse to bleeding, except in certain cases, (as before specified,) and to a moderate extent.

Although in *typhoid fever*, I have never, to the best of my recollection, resorted to bleeding, and have had few fatal cases in a moderately large number of patients, yet I have no doubt that in a few cases the cure would be accelerated by general, and in more by local depletion. If, in the early stage of this disease, there is a full, strong pulse, and a determination of blood to any of the vital organs, one or two moderate bleedings from the arm might be resorted to with probable advantage, with the view to the prevention of local inflammation. This should be used with great caution, however, as the disease is generally very protracted, and the debility, ultimately, very

great. If inflammation, or active congestion of any of the vital organs should occur in the course of the disease, cups or leeches applied to the vicinity will often have a beneficial effect. Some of the French physicians, as BOUILLAUD, CHOMEL, and LOUIS, and, also, but to a less extent, some in New England, recommend depletion, while others, probably a large majority, reject it altogether. With Professor BARTLETT, I think that, "for the present, our management of the disease must be eclectic and rational, not exclusive and specific."

As in yellow, so in *typhus fever*, I cannot speak from much experience. It is a disease rarely prevailing in the localities where I have formerly practised. In regard to direct depletion in this affection, there has been a diversity of opinion, but it is now generally regarded as but seldom necessary. Where there is severe headache in the stage of reaction, or a danger of local congestion, and the pulse is strong, the abstraction of a few ounces of blood by venesection will, generally, relieve the former symptom, and tend to obviate congestion. When there is congestion of the brain, or other vital organ, the application of cups or leeches will often be beneficial.

Eruptive diseases.—Under this head, I shall treat of diseases of the skin, and also some of the *eruptive fevers*, as variola, rubeola, scarlatina, and erysipelas.

In *variola*, I have never bled, nor have I ever regretted doing so, except in one instance, which terminated fatally in a few hours from my first visit. The patient, in this case, was a plethoric woman, about 40 years of age, and a stranger to me. I found her slightly delirious, with a flushed countenance, contracted pupils, and a full and frequent pulse. She had some headache, and severe pains in the lumbar region. She attributed her sufferings to the non-appearance of her catamenia, and as there was no small-pox prevailing in the neighborhood, and no eruption visible, I did not suspect that disease. I prescribed for her (about 1 o'clock P.M.) and requested to be informed of her condition in a few hours. At 5 o'clock P.M., I received a message that she was much relieved, and had taken a little nourishment; but at 8 o'clock P.M., I was hurriedly

summoned to her bedside, and found her in a dying condition. She lived about half-an-hour after my arrival. I then perceived on her face a papulous eruption, not very thick, however; and after death a few spots on the neck and chest. As many of the neighbors were crowding into the room, I considered it my duty to let them know that I thought the disease was small-pox. This offended the husband, who doubted her having the disease, and I requested that her former physician (a gentleman of large experience and reputation) might see the body with me. We met the next night, and, on examination, found her covered from the head to the feet with the variolous eruption, which had commenced to appear before life was extinct, and continued to increase up to the hour of our examination. Like myself, he had no hesitation in pronouncing it confluent small-pox of the most virulent kind. I afterwards found that the patient had spent a portion of a day, about ten days previously, in an infected part of Camden, N.J. In this case, venesection would, probably, have temporarily relieved the congested condition of the brain, have eliminated the eruption, and might have prolonged life; but the result would have ultimately, no doubt, have been the same. This is the only adult case I have ever lost by small-pox, and only two children, in a pretty large experience with the disease, and, therefore, that *experience* supports me in the opinion that it is very seldom necessary. Professor WOOD says, that "bleeding should never be used in the hope of eradicating the fever, or diminishing the amount of the eruption. It has been well ascertained to have neither of these effects, at least with the slightest approach to certainty." "Sometimes, when the eruption seems to be kept back by powerful internal irritation," (as in the case related above,) "bleeding has the effect of hastening it." "I repeat, the bleeding should be employed only to avert threatened danger from some internal organ. If there should be evidences of inflammatory congestion of the brain, lungs, stomach, or other important organ, accompanied by a full and strong pulse, he recommends moderate venesection, followed by leeches or cups near the affected organ. According to my own obser-

vation, this condition of the vital organs does not often occur to such an extent as to require bleeding. GREGORY, in his lectures on eruptive fevers, delivered in St. Thomas' Hospital, London, says:—"If the pulse be sharp, or very full, if the headache be severe, with accompanying epistaxis, blood-letting is not only useful, but *absolutely indispensable;* for the eruptive process is often impeded by the quantity of blood in the body, and the violence of the arterial excitement." "Your object is to unload the lungs, the liver, or the brain." It may be that, in hospital practice, and in our more plethoric transatlantic brethren, this condition of the system more generally obtains; but in private practice in this country, bleeding, according to my observation, is but seldom required.

In *Rubeola*, bleeding, for the disease itself, I believe, is never necessary. Some of its complications, or sequelæ, as pneumonia, laryngitis, bronchitis, etc., may require topical, possibly general, bleeding. A well-managed and well-nursed case of measles is, however, seldom followed by these diseases. Convulsions sometimes occur in children, when, if from a congested condition of the brain, especially in the early stages, leeches should be applied to the temples.

In regard to *scarlatina*, Dr. GREGORY remarks:—"I wish to impress on you, strongly, that scarlet fever not only admits of blood-letting, but often imperatively requires it, and that on general bleeding alone the safety of the patient often depends." He then gives a case approaching coma, another where there was great gastric irritation and vomiting, etc., and says:—"While I thus advocate the necessity of blood-letting in some cases, I freely acknowledge that it is inapplicable in others." Different epidemics, also, are affected differently by it, some bearing it well, others not at all. Professor WOOD says, that "it should be used with much caution and reserve, and only when there is an obvious indication; as when symptoms of inflammation of one of the vital organs exist and threaten great danger." I can say with Dr. WOOD, that "I have seldom found it advisable to bleed in any case; and do not remember the instance in which it appeared to me that I had occasion to repent my

abstinence." I believe that it is the generally acknowledged practice of American physicians to abstain from general bleeding in scarlatina, as a rule. Where convulsions occur from cerebral congestion, or where the inflammation of the throat is severe, and not of a low or asthenic grade, leeches to the temples or throat will often afford much relief. It should be remembered that leech bites bleed very freely in scarlet fever, owing to the excited state of the cutaneous circulation, and the number used should not be great. When pseudo-membranous laryngitis accompanies, or supervenes upon, scarlatina, leeches may also be applied to the throat, though not with much prospect of success. In some of the other sequelæ, as pneumonia, otitis, or other inflammations, leeching is indicated.

Erysipelas.—The remarks made respecting depletion, in the three preceding diseases, will apply, generally, to erysipelas. It is only where, with inflammation or active congestion, some vital organ is dangerously affected, that leeching is indicated. In the only fatal cases of erysipelas that I have seen, death has been caused by a translation of the disease to the brain, and where there is a danger of this occurring, local, in some cases general, bleeding is required. Since my residence in Chicago, I had a severe case of erysipelas, in a young woman of good constitution, in which, on the third day of the eruption, violent cephalalgia, with great restlessness, occurred, which did not yield to the remedies administered, and which I feared might terminate in the translation of the disease to the brain. At a subsequent visit, the headache having increased, and the pulse being full and firm, I opened a vein in the arm and took 12 or 14 ounces of blood, with great, and speedy, and permanent relief. The patient recovered well, under the use of ferruginous tonics. But, except in these complications, I do not consider blood-letting necessary or advisable generally, though in the young or middle-aged, if the constitution is robust, the pulse full and hard, and the inflammation severe, bleeding will probably abbreviate its duration. On this subject there has been much diversity of opinion, probably owing to the different views of the nature of the disease. Those who regard it as

only an inflammatory disease, would probably advocate blood-letting; those, again, who view it as a disease of debility, will resort to tonics and stimulants; while those who believe it is chiefly owing to a deranged condition of the digestive organs, especially the liver, will resort to measures calculated to relieve this condition. In different localities, the disease may assume one of these conditions to a greater extent than the others, and the treatment should be modified accordingly. As it has appeared to me, I have generally thought it comprised the three conditions combined, *viz:*—hepatic and gastric derangement; and inflammation, with a tendency to an asthenic state of the system. If this view is correct, bleeding would generally be unnecessary and injurious.

I have a few words to say in regard to blood-letting in *diseases of the skin*, and then these articles, which have been more numerous and more extended than I at first designed, will be brought to a close. In private practice, (at least, such has been the case with me,) there is not a large field for experience in diseases of the skin. As a general rule, I have seldom resorted to blood-letting, especially venesection, in this class of diseases. My chief authority for the following observations, is the work, on diseases of the skin, of Dr. NELLIGAN, of Dublin.

In *urticaria*, sometimes, the febrile symptoms are very active, in which case GREGORY, as well as NELLIGAN, advises venesection. The former particularly, "strongly counsels" it. WOOD advises it, "if the disease is obstinate and the patient plethoric."

In *eczema rubrum*, if the patient is of full habit of body, and there is much fever and pain, venesection may be required in some cases, in the early stages of the disease; but more frequently the topical abstraction of blood, by leeches, from the vicinity of the affected parts is sufficient, and is attended with much benefit.

Herpes rarely requires depletion. In the phlyctenoid and zoster varieties, where the fever is active, and occurring in young persons of full habit, venesection, or the application of leeches over the affected part, may be of use. These measures

should not be resorted to, until the eruption appears. Neither GREGORY or WOOD advise depletion.

In *pemphigus*, this remedy is rarely required; but should the accompanying fever "continue after the bullæ are fully developed, or inflammatory symptoms then appear, a small abstraction of blood from the arm may be requisite." [NELLIGAN.] WOOD recommends, "in the severe forms, where the pulse is strong and the constitution vigorous," to take blood from the arm, and by leeches "near the severest inflammation."

Acne simplex, generally requires very little treatment; but when it becomes obstinate, and "returns in a very active form every spring, a general bleeding, in strong, young persons, sometimes prevents its outbreak." WOOD recommends the same treatment, with the addition of leeches near the affected part, where the inflammation is severe and the patient vigorous, or plethoric.

Impetigo, occurring in young persons of robust constitution, sometimes requires local, even, in some cases, general bleeding. [NELLIGAN, WOOD.]

In *lichen agrius*, unless in "strong, healthy young persons, residing in the country," general bleeding is not required, "the local abstraction of blood, by means of leeches applied in the neighborhood of the eruption, being, in most cases, sufficient. Even in the chronic stages of the disease, this form of local bleeding is, in general, attended with the best results, as it relieves the congested state of the capillary circulation which is present." [NELLIGAN, with whom WOOD agrees.] In the other forms of lichen, depletion is not required.

In *psoriasis*, "in strong, healthy, plethoric young persons, when the eruption is of the guttated form, or affects only a small portion of the skin," venesection may precede other remedies. In some cases, the bleeding may be repeated, but not largely. [NELLIGAN, WOOD.]

In *pityriasis*, when there is considerable cutaneous inflammation, and the patient is vigorous, it may sometimes be proper to take blood from the arm; though this measure is not often required.

REPORT OF THE COMMITTEE ON PRACTICAL MEDICINE AND EPIDEMICS.

By H. NOBLE, M.D., of Heyworth, Ill., Chairman.

Read to the Illinois State Medical Society, June, 1866.

Mr. President, and Gentlemen of the Illinois State Medical Society:—

In presenting a report on Practical Medicine for the current year, I shall endeavor to give chiefly personal observations of the nature and character of diseases which have been prevalent in the sections of the State which I have, myself, been able to inspect.

The early part of the past year presented no features of particular interest. The general health was about as good as common; and there was not, to my knowledge, any epidemic of importance prevailing in the State.

In the latter part of summer, autumnal fever prevailed to considerable extent in our State, and, indeed, through the whole North-west. Bilious remittent, and intermittent fevers were common in almost every neighborhood in Illinois, but few families escaping a visit from the unwelcome disease. The type was mild, almost all cases being manageable, and yielding readily to treatment. The number of fatal cases was very small, in proportion to the number attacked. In treating this disease, I have, for many years, changed my practice of giving small doses of quinine frequently repeated, to large doses at longer intervals, say from 5 to 8 grains night and morning. I think less medicine arrests the disease when given in this way, and that there is less danger of its recurrence.

Other diseases have visited our State within the last year, some of which might be classed as epidemics; but none of them prevailed over any considerable portion of the State at any one time. Perhaps the two diseases which have attracted, most directly, the physician's attention, are cerebro-spinal meningitis and erysipelas. These diseases have been present in various localities during the past year.

The fatality attending eerebro-spinal meningitis is truly appalling. But few of the well-marked cases which have come under my observation have recovered. Dr. McVEY reported several cases of this disease at the meeting of this Society, held in Chicago, in 1864. In the summer of 1864, 8 or 9 cases occurred in DeWitt County, in this State. In 1865, the disease appeared in the prairie south of Long Point timber, in DeWitt County. There were, also, several cases in McLean County. I saw some of the first cases which occurred in DeWitt County, and I have watched the disease closely as it was possible for me to observe it. The following symptoms are generally present:—The invasion of the disease is commonly sudden, commencing with a chill, attended with severe pain in the head and back; the eyes are dull and suffused; the pulse generally frequent and feeble; the limbs ache, and the muscles are commonly sore to the touch. As the disease progresses, the pain in the head increases and concentrates at the base of the occiput; the muscles of the back of the neck become irritated and contract permanently, and, in some cases, the muscles of the back become implicated sufficiently to produce opisthotonos. The fever is not, generally, of a violent grade, but is persistent, not leaving the patient entirely, at any time. In many cases, the nervous symptoms predominate, though seldom of an active character, the patient being dull and not disposed to talk, answering questions slowly and briefly, sometimes requring a peremptory tone to secure the attention of the patient. The disease is frequently attended with rigors, which seem to be caused by morbid nervous action. Some parts of the skin of the patient is frequently "spotted," from the size of a pin-head to the size of a thumb-nail, caused, I believe, by infiltration of tissue under the cuticle. From this circumstance, I suppose, the disease derives its popular name of "spotted fever." The bowels are, commonly, regular, and the discharges appear healthy to the last stages of the disease, when not disturbed by the improper use of cathartics. The disease is generally rapid in its progress, producing, if not arrested or modified by treatment, irreparable mischief in two or three days,

sometimes in much less time, as I have known death to occur in sixteen hours from the attack. The disease has chiefly attacked children and young persons, a large majority of the patients being under 12 years of age. It does not appear to be contagious, not having, under my observation, attacked more than two members of any family.

Of the treatment of this disease, I desire to say, that I consider blisters to the back of the neck, reaching up to the base of the brain, as close as possible, to be of the highest importance. Indeed, I have seen no remedy used which had any influence in checking the disease before vesication of the back of the neck was produced. In every case that I have seen, the head was drawn back and remained so until the disease yielded to treatment, or death closed the scene. This rigidity of the neck was relieved, temporarily, by blistering from the base of the brain six or eight inches down the spine. As the blister ceased to discharge, and healed, the unfavorable symptom usually returned, and would be again relieved by blistering another section of the spine immediately below the first blistered surface. Some of my patients recovered, after being blistered six or eight times. I have seen no patient recover without blistering several times. I consider blisters indispensable in the treatment of this disease, no case under my observation having recovered without them; and although many patients died that were blistered, I must say that the blisters, in every case, relieved, to some extent, the urgency of the symptoms. I would recommend, in every case of this terrible disease, a blister on the back of the neck, and reaching down between the shoulders, as the first treatment to be applied, believing it to be more efficacious than any or *all* other remedies. Opium, in large doses, and repeated frequently enough to relieve the patient of pain, is absolutely necessary. The nervous system suffers very much, and should be, as nearly as possible, relieved with opiates in some form or other. During the continuance of the disease, and in all its stages, the patient should be kept as free from pain as possible, which can be best done by the use of some preparation of opium.

Several of the cases which I saw were attacked, in the progress of the disease, with rigors, sometimes at regular intervals, but oftener without marked periodicity. These paroxysms very much resembled the chills of intermittent fever, but were not followed by the severe fever, and, at its cessation, the sweating stage. I attempted to arrest them with quinine, but did not succeed; indeed, the quinine seemed to aggravate the paroxysms and make the patient worse. In consultation with my friend Dr. MCFARLAND, of Heyworth, and at his suggestion, I gave strychnia, $\frac{1}{16}$ of a grain, every four hours, and succeeded in arresting the chill completely, and my patient improved satisfactorily to convalescence. This remedy arrested the chill in every case in which I tried it, and that was a large proportion of all the cases I treated. I think nine out of ten of my cases had those nervous rigors in some stage of the disease. The duration of the disease varies from less than twenty-four hours, to two or three months, some patients getting well in eight or ten days, while others get well in six or eight weeks. Some patients die in less than twenty-four hours' sickness, others live three months and then die.

From this, it appears that the disease is sometimes attended with great violence, and at other times, or in other cases, it is slow in its progress, destroying life by a total exhaustion of the vital forces. In the outline of treatment which I have given, I have attempted to bring to the notice of the profession, the remedies which appear to be efficacious in the treatment of this disease. The minutia of detail every physician can supply for each case as it is presented to him. I have not seen enough of this disease to form a decided and fixed opinion of its nature or treatment, but I am happy to say that contact with it has lessened its terrors somewhat, and the experience of the last two years leads me to hope that cerebro-spinal meningitis will, in a short time, be comprehended and understood by the scientific physician, and yield as readily to appropriate remedies as other diseases of equal violence do, when properly treated.

There are, perhaps, but few diseases which are more fatal and give a higher per cent of mortality than the one under con-

sideration, and there is, certainly, none in which the physician has had less cause to be satisfied with the results of treatment. But that the close scrutiny and observation of the medical profession will place it in the list of manageable diseases, I have no doubt.

Erysipelas has visited some portions of our State in an epidemic form, and in some places it appeared in a severe or malignant character. Facial erysipelas, complicated with diphtheria, was sometimes very fatal, in some instances causing death in a few hours. I noticed many cases, in which the two diseases were present at the same time, thus increasing the danger of the patient. Erysipelas, in epidemic form, has frequently visited our State, and is always attended with a high per cent of mortality. Central Illinois was visited with epidemic erysipelas about thirty years ago, which was very fatal, carrying off many victims. I noticed in that epidemic, that not one pregnant woman attacked by the disease recovered, although there was under my observation at that time many such cases. My attention was specially drawn to this fact during that epidemic, and I have been a close observer of cases of that character ever since, and I must say that I have never seen a pregnant woman attacked with epidemic erysipelas on the face that got well. I do not say that such cases are necessarily fatal, but that I have not had the good fortune to witness their recovery.

A peculiarity of erysipelas, which should always be borne in mind by the physician, is the possibility of communicating to the parturient female the virus which produces puerperal peritonitis. There is some diversity of opinion among physicians about the danger of waiting upon parturient patients, while attending on cases of erysipelas, and every physician has an undoubted right to enjoy his opinion, as to whether there be danger or not; but no physician has a right to hazard the life, or I might say sacrifice the life, of a lady, by doing what so large a portion of the medical profession believe to be dangerous and unjustifiable. Men have, individually, the right to enjoy their theories when no party is interested but themselves; but in a conflict of the-

ories, no man has a right to *act* on a theory which, if wrong, he knows must necessarily produce the death of his patient. I speak of the disease as being fatal, because I have never known a case of puerperal peritonitis to recover, which I had good reason to believe had been produced by the virus of erysipelas.

The treatment which I have found most successful, is tonic or strengthening. In many cases, quinine is needed; and in all, the muriated tincture of iron is useful. Indeed, I may say that the tincture of iron is the main remedy, and I think it is growing in favor every year. I have treated no case of erysipelas without it for many years. The nourishment should be generous. The system needs support, and should be nourished by good digestible food.

Small-pox has prevailed to an unusual extent the past year. The facilities for its transmission afforded by our soldiers have been very great, and the disease has lost no opportunity of displaying itself. But few parts of the country have been exempt from its visits; and, although the number of cases has been very large, the per cent of mortality has been small. This disease had never prevailed to any great extent in the rural districts until within the past few years, consequently, the people knew little or nothing of the nature and character of the disease, and but few physicians in the country had had opportunities of studying it at the bedside, notwithstanding which, it has been, as far as I have seen, well treated.

I have seen a few cases which had been treated with sudorifics and stimulants, which proved fatal, but I am happy to say that I have known no educated physician to resort to that mode of treatment. The great majority of cases of this disease were modified by having been preceded by vaccinia, in which cases variola is disarmed of almost all its terrors.

Vaccination has been pretty generally practised throughout our State, and to that we are indebted for our comparative immunity from this loathsome disease. Notwithstanding the protection of vaccination is apparent to all, it is evident the people but imperfectly understand the value of the remedy, otherwise they would *all* avail themselves of its protection.

Instead of this being the case, we find in almost every community a few persons of mature age who have never been vaccinated at all, and others who have been once or twice vaccinated unsuccessfully and gave it up, supposing it would never take, because it had not on the two or three trials made. Such persons should be instructed to continue to vaccinate until it *does* take, the protection secured being ample compensation for the perseverance necessary to secure it. The degree of protection is not always properly presented to the people by the physician. Absolute and perfect protection from small-pox and varioloid is not promised by all physicians, and a feeling of insecurity and distrust is the consequence. I believe it is the duty of every physician to state explicitly to the people, that vaccination, properly performed, and repeated until the susceptibility to the disease in the system is entirely destroyed, which can only be known by revaccination producing no effect, is a perfect and unfailing protection from small-pox and its modifications. The testimony of the whole profession to that effect would remove the distrust of the public mind and make the people more anxious to avail themselves of a remedy so well adapted to their wants. Nor do I believe there is any exaggeration or overcoloring of this statement of the efficiency of the protection afforded by vaccination. Nor have I any doubts of its permanency.

The theory that teaches that the protection must be renewed occasionally, or at any specific period, is, I think, fallacious. Your reporter has been protected perfectly for over fifty years by one vaccination. Revaccination has been performed four or five times, but had no effect. I knew a family of nine children have small-pox at one time. The father and mother and mother's sister had each had vaccine disease thirty years before, and had never been revaccinated. The mother and her sister nursed the nine cases of small-pox and were not in the least affected by it. The father had varioloid in a mild form, not more than a dozen pustules showing, which dried without lymph or matter, and he had no secondary fever. I have, on five different occasions, treated small-pox in families where there were children unprotected by vaccinia, which I vaccinated from

the second to the fourth day after the small-pox pustules broke out, and succeeded in every case (eleven in all) in protecting, perfectly, the children from small-pox and varioloid both, the vaccine disease not being modified or influenced by the small-pox at all, so far as I could perceive. Other gentlemen may have cases illustrating more clearly the extent of the protection afforded by vaccinia, and I hope they will give the result of their observations to the profession, for I know there is much yet to be done in the way of diffusing useful information among the people on this subject. I hope every physician recognizes the fact that it is as much his duty to prevent disease when it is possible to do so as to cure it; and I know of no disease that can be so perfectly barred from the human system as variola.

The winter, just passed, has been of remarkably uniform temperature in Central Illinois, and to that fact, I think, we may attribute our comparative exemption from pneumonia, which disease has prevailed to a limited extent only. The few cases which I saw during the winter were mild, yielding to treatment readily. But as spring advanced and the warm season approached, pneumonia of a more grave form made its appearance in different parts of the State, many of the cases terminating fatally. Since the middle of March, the most of the cases of pneumonia which I have seen required tonics early in the disease, and but few of them recovered without the exhibition of tonics or anti-periodics.

Diphtheria has not, in my observation, prevailed epidemically, though sporadic cases are not infrequent. It has generally, when not complicated with erysipelas, yielded readily to treatment. I have succeeded best with a tonic constitutional treatment, and a wash to the inflamed throat of solution of sulphate of copper, 40 grains to the ounce, applied once or twice, not more.

During the past year, I have not heard of any portion of the State being visited with epidemic dysentery. I have seen but few cases the past year, were of mild type and yielded readily to treatment.

Measles has not, to my knowledge, prevailed to any great

extent, the cases which I have seen being mild and resulting favorably.

Scarlatina has visited the central portion of the State, though not, so far as I have learned, of a severe or grave form. The most of the cases which I saw were mild, running their course without complication, and leaving no unpleasant sequela.

Typhoid fever has not prevailed in Central Illinois the past season to as great an extent as it has in some previous years. I have seen some cases of mild character, which recovered satisfactorily. For a period of nineteen years, this disease has been carefully observed in McLean and adjoining counties, and during all that time the south-east part of McLean County has produced many more cases of typhoid fever than the south-west part of the same county. I am not well enough acquainted with the geological formation of the two localities to state if there be any perceptible difference, but I am positive of the fact that while one locality has been camparatively free from the disease during the period named, the other has suffered more or less every year, and many years severely. Similar differences in other contiguous localities are, I believe, not unfrequent. Typhoid fever is always a serious disease, generally taxing the resources of the physician and the vitality of the patient, each to their utmost capacity.

The treatment of this disease recommended by different members of the profession, at different times, has varied considerably. "Slight ptyalism," early in the disease, has been recommended by some; quinine, in large doses, is the favorite remedy with others; while veratria has had its advocates, zealously urging its claims to the attention of the profession. Other remedies and modes of treatment have been recommended, and each of them has been submitted to the scrutiny of the profession at the bedside, and perhaps none of them have fulfilled all that was hoped for by their advocates. Indeed, the treatment of a case of typhoid fever requires a *physician*, and not a remedy. A remedy or particular plan of treatment cannot be safely substituted for a physician, who should be always ready to modify or change the remedy or prescription to meet the

varying condition of the patient. When this is done properly, the disease will be scientifically treated. I congratulate the Society on the improvement of the profession of our State in the treatment of this disease. The treatment now generally adopted, is certainly more rational, more scientific, and more satisfactory than the treatment practised ten years ago.

Great interest is now felt by the medical profession on the subject of Asiatic cholera. The approaching visitation of that awful disease, judged by the history of former epidemics, may be expected to reach us in a short time. The rapidity of its progress, and the line of its approach, may each vary from its former visits; but that the general character of the epidemic will be much changed, or the violence of the disease materially modified, we can scarcely hope.

The causes which produce cholera, if at all, are but imperfectly understood. The combination of influences are so complicated that the closest observation has not satisfactorily classified them. That a peculiar condition of the atmosphere is necessary to the epidemic character of the disease I have no doubt. This is demonstrated by the rapid spread of the disease, and, in some instances, of its more rapid decline. This was illustrated in the rapid abatement of cholera in St. Louis, when the last epidemic of cholera visited that city, the particulars of which are, doubtless remembered by every gentleman present. Whatever this peculiar condition of the atmosphere may be, it is evident that it is beyond the control of science in our present state of knowledge. No quarantine or sanitary regulation has been effectually opposed to it, and we are compelled to meet this as we do all other diseases, with the best resources of the science of medicine.

The observation of former epidemics leads us to expect satisfactory results from the judicious treatment of the first stage of the disease, the diarrhœa generally yielding to the usual remedies; but when the case has progressed to vomiting, cramps, and collapse, but few recover. The treatment to be successful, should, in all cases, be applied early; and when the diarrhœa yields, everything that would be likely to reproduce it should

be carefully avoided. If we could get the people to know that, during an epidemic of cholera, what they consider an insignificant diarrhœa, is really the first stage of the terrible destroyer, and that at its first appearance, without a moment's delay, is the time they should apply to a physician, more than one-half of its victims would be saved to life and usefulness.

I, therefore, consider it to be the imperative duty of every physician to inform the people, when an epidemic of cholera is approaching, that they should live temperately. All excesses of eating or drinking should be carefully avoided. Their habits of life should be uniform and regular, that is, no excessive fatigue, followed by periods of relaxation, should be indulged. The diet should be nourishing and taken in moderation, and always at the regular periods. Cleanliness is indispensable. Everything producing an offensive odor should, if possible, be corrected. Free ventilation of all parts of the house should be secured. At the first appearance of diarrhœa, consult your physician. A few hours delay may change an apparently simple diarrhœa into a fatal case of cholera. Depend on no specifics or cholera doctors. No skill or science known to man can insure uniform success in cases of fully developed cholera. The only safety is in the proper treatment of the first or diarrhœa stage.

When the people understand and strictly follow these directions, cholera will be disarmed of the chief part of its terrors.

ON THE CELLULAR VITALITY OF THE TISSUES, AS AN EVIDENCE OF LIFE IN NEW-BORN INFANTS.

By B. H. CHENEY, M.D., of Joliet, Ill.

It sometimes occurs that contraction of various muscles is observed in cases of new-born infants, who would otherwise be considered as still-born, there being no other sign of life. In such cases, physiological evidence seems conclusively to

prove that such contractions are but the manifestation, on the application of due stimulus, of a property inherent, not only in the muscular fibre, but in all organized tissues. DALTON says: "Every organ in the body is endowed with the property of *irritability;* that is, the property of reacting in some peculiar manner, when subjected to the action of a direct stimulus." * Such stimuli may well be, in the case of a tender, new-born infant, the external air, water, or any medium or substance hitherto foreign to its life, but to which it is subjected on coming into the world.

In reference to this property of irritability as regards muscle, it is expressly stated by the same author, that if the heart of a warm-blooded animal be rapidly removed from the chest, and, *when its pulsations have ceased*, touched with the point of a steel needle, its contractions can be readily excited.† It will not be contended that any other life than that peculiar to organized structures, and inherent therein, is manifested thereby.‡ We find the same property, namely, that of acting in accordance with a particular function, respondent to due and direct stimulus, to exist also in the nerve-fibre, so long as its continuity remains unbroken, and there is still enough of its molecular (cellular) vitality left to render it organized. By molecular (cellular) vitality, is to be understood simply that life which exists in every organized structure, so long as nutrition is going on therein.§

It is necessary, however, to observe, in this connection, the distinction between *organized* and *organic*. "Each substance called into existence, (manifested,) in the life of an organism,

* Human Physiology, p. 370.

† Dalton, *opus citat.* p. 57, *et seq.*

‡ "By the irritability of tissues is simply meant a capability of receiving impressions from surrounding agents, and thus producing phenomena, and is only to be observed when these tissues are alive. It is the 'capability of being acted upon.' It, of course, belongs to everything that has life; to plants as well as animals; to the organic molecular cell, as truly as to the most perfect and complicated structure." [Hodge, Dis. of Women, p. 19.

§ "Every animal presents itself as a sum of vital unities." [Virchow, Cell. Path. p. 40.

which is not found in the inorganic world, is called organic; but it does not follow that it must necessarily be organized. That is, it may appear to the eye homologous, and be incapable of separation into dissimilar parts by the knife, or by other anatomical means.

"Everything organized, on the contrary, consists of several organic substances of certain form, each one of which possesses certain peculiarities, which influence each other according to certain laws, and show themselves by dissection, or by the microscope, to be different.

"Albumen, protein, serum of blood, etc., are organic, but not organized: they are called, therefore, organic substances without form. Nerve, muscle, gland-tissue, etc., are, on the other hand, organized, and, *eo ipso*, organic."*

Physiological life, then, or the molecular (cellular) vitality resident in every organized tissue in a state of nutrition, is common to all, and is, in the abstract, the same; its manifestation depends upon the function of the organ, and distinguishes muscle from nerve, nerve from gland-tissue.† Contraction is the manifestation of the function of muscle; sensation and the conduction of impressions, that of nerve; (these latter of course inappreciable to the observer, except in their results;) secretion, that of gland-tissue; etc.‡ Irritation, therefore, produces different and various phenomena, according to the organ or tissue upon which its influence is exerted.

* Joseph Hyrtl, Anatomie, etc.

† "If we speak of the life of the individual parts of a body, we must also know in what way life manifests itself, and whereby it is essentially characterized." [Virchow, Cellular Pathology, p. 23.

‡ It has been objected to the statement that muscle poseesses the peculiar property of contractility, that no new idea is advanced thereby, as the contractility is simply the manifestation of irritation. [Hodge, *opus citat.* p. 21.] Granting the fact that contractility is but the manifestation of due stimulus, it is difficult to see why it is therefore any the less a property, and, as found in mnscle, both a peculiar and vital property. A property may be either active or passive; the former is called a *faculty*, the latter a *capacity*. Irritability, (excitability,) a property possessed by all tissnes, is purely passive in its nature; the varied manifestations resulting therefrom are active and peculiar, and are individual "properties," in the strict sense of the word.

Further, molecular vitality has, of course, its grades, as well as its characteristic distinctions. It is much less, for example, in cartilage than in muscle. But it nevertheless exists in all, and in the fluids of the body as well as in the solids. As molecular, or cellular, vitality is the basis of all activity in the muscular or nerve-fibre, so does it animate the blood-corpuscle in the discharge of its individual functions. What these functions are, we may not be able, in the present state of our knowledge, fully to say, as their performance does not appeal directly to our physical senses. But no one doubts that the blood-corpuscle possesses the faculty of performing such functions, and, at the same time, a capacity for irritation. And it is because we observe that chief and most constantly existing pathological condition, inflammation, to be invariably characterized by disturbance in the complemental relation between these scavengers of waste and purveyors of repair on the one hand, and the ultimate cell constituents of the tissues on the other, that we can most properly give to this condition the comprehensive definition, "a lesion of nutrition."

The amount and kind of irritation, therefore, necessary to call into play the functions of different organs, varies as much as the resultant phenomena. The prick of a steel needle, which may be sufficient to cause a muscle to contract, will, perhaps, be without perceptible effect upon a nerve. But a more powerful stimulus, such as electricity, will produce the corresponding manifestation of function in the latter. Whatever may be the necessary stimulus, whether mechanical, chemical, or electrical, the physiological fact of molecular (cellular) organic life, proven by them, remains the same.

It is much to be regretted that so great confusion of ideas should have prevailed in regard to the nervous system. No part of physiology is so chary of affording definite ideas regarding cause and effect; nowhere in the animal organism is the *post hoc* so liable to be confounded with the *propter hoc*. The physiology of the nervous system, lying, as it does, upon the confines of the physiologist's domain, has always stood in danger of being obscured by the mist of metaphysics, in regard to all symptoms usually considered indicative of life. The fault

here, we apprehend, lies not so much with physiology as with psychology; the cultivators of the latter science not sufficiently realizing the necessity of an acquaintance with the former, in order to proceed upon sound bases and from correct premises. The confusion is not to be wondered at, when one considers the limited nature of human knowledge, and the inadequacy of language to express that which is known. But it is not germane to our present purpose to enter at all upon so broad a field of inquiry and research. All that it is necessary to bear in mind here, is the fact that the nerves, in common with all organs, have a physiological or organic life *per se;* and although they are, through the cerebrum as a grand source, most intimately connected with the functions of that mysterious essence which we call mind, yet are they physiologically in no way dependent thereon.

The reflex action of the nerves is dependent on this power resident in the spinal cord, and mental consciousness or perception is not at all essential to its performance.* Further, it is important to remember that the contractility of muscle is not dependent upon the integrity of the nerves. Other causes, entirely distinct from the stimulus of innervation, can operate directly in arousing the dormant force of muscle. This is implied in what is said above of molecular (cellular) organic vitality. It is conclusively proven by experiments with the woorara poison, an agent which, although it completely destroys the vitality of the nerves, leaves untouched the muscular fibre. So strong is this proof, that even when the nerves refuse to respond in the slightest degree to the most powerful chemical and electrical stimuli, the muscles have been found awake to the slightest mechanical irritation.†

* The term "sensitive," applied to the afferent nerves, is open to some objection, on the ground of inaccuracy and ambiguity. It is manifestly incorrect to say, that an animal has lost *sensation*, and yet that the *sensitive* nerves still retain their integrity. Physiologically, then, there are sensitive (afferent) nerves in the ganglionic system of organic life. But this is not the general acceptation of the term "sensitive." At the same time, the proper distinction between sensation and consciousness is too well understood to need more than an allusion.

† Vid. Virchow, Cellular Pathology, p. 333.

We find, then, that all organized tissues in a state of nutrition have a molecular (cellular) life, manifested by the performance of functions peculiar to each, on the application of due and direct stimulus. It seems more than probable, that the seat of this molecular vitality is in the characteristic cell of the tissue, and, hence, the term cellular has been used above, as synonymous with, and explanatory of, the sense in which molecular is here to be understood.*

The basis of organization in all tissues is, necessarily, nutrition. This exists, of course, as well in the fœtus prior to birth as thereafter. Hence, the distinction made by Dr. DENMAN† between uterine and extra-uterine life seems to be, in this regard, a useless one. For all purposes upon which the properties belonging to organized tissues depend, life, whether intra or extra-uterine, is one and the same.

The case of Fish, or Fisher, *vs.* Palmer, in Beck, Medical Jurisprudence, vol. i., p. 410, first prompted these remarks. Here, the question turning upon the life of an infant at the time of birth, it was decided in the affirmative, on the simple evidence of servants that there were manifested "convulsive movements and twitchings of the lips" on the child being put into a warm bath. That the muscular contraction alluded to is strong evidence, if not proof, of *recent* life, I would by no means dispute. But it is consistent to suppose a case, in which a child, living a short time previous to birth, has died just before, or during, delivery. In such a case, is it not strictly in accordance with the teachings of physiology to find that the organized structures, muscle particularly, should retain sufficient organic vitality, resulting from the nutrition already received and the elements of which remain, to manifest the property of irritability on the application of a stimulus? Nay, more, should we not expect to find this?

* Since writing this article, I have seen in the *Am. Journal of Med. Sci.* for April, 1866, p. 511, a notice of Balbiani's researches. These investigations, however indefinite they may at present be, probably contain the germ of a truth that will ere long be universally recognized.

† *Fish* v. *Palmer*, Beck. Med. Jurisp., vol. i., p. 411.

In the case of Fish, or Fisher, *vs.* Palmer, it would, therefore, seem that the evidence of the two servants went negatively to show that the child was born dead; as it is stated, that beyond the convulsive twitching and tremulous motion of its lips, "it never manifested any other sign of life." Granting that the child was alive just previous to its entrance into the world, it is reasonable, and in accordance with our knowledge upon the subject, to conclude that the "convulsive twitching and tremulous motion of its lips" might very naturally have been caused by the bath of water into which the child was placed.

The object of these remarks is to show the insufficiency of muscular contraction as a demonstrating evidence of the presence of life—life, that is, in the common acceptation of the term. It is, therefore, in the case alluded to, the absence of any other sign of life whatever, which leads to the opinion that it was still-born.

It is, of course, impossible, in the present state of our knowledge, and it may always be so, to draw a definite line of demarcation, showing where life, as manifested by the presence of an immortal essence, (mind or soul,) begins. It is manifestly incorrect to consider "conscious existence" as a proper definition of this life, for who can prove that the infant, on taking its first breath, is conscious of anything?* This act may not only be independent of consciousness, (that is automatic,) but it may be a purely physiological one in itself, caused by the stimulus of the air or water upon the periphery of afferent nerves. That is, it may be eccentric; whereas automatic phenomena are (usually) centric in their causation. The maintainance and continuance of respiration is, of course, dependent upon the presence of that essential force which constitutes life; but who shall say what are the sure characteristics thereof; its (so to speak) physiognomonic evidences.

* It might at first seem that sleep affords sufficient argument against conscious existence as definitive of life. But it is probable that in strictness, consciousness exists even in the most profound sleep, although the brain, as a physical organ, may not be in a condition to manifest that consciousness to our perception at the time, or to our memory afterwards.

A case in point is related in the *American Journal of Medical Sciences*, for April, 1866. A woman, who was suckling a child ten months old, aborted with a fœtus of "from 6½ to 7 inches in length, and, probably, of not more than five months' gestation." On removing the fœtus, the attending surgeon (Dr. J. D. MOORE) placed it partially enclosed on the membrane, and with the placenta still attached, in a vessel of water, the mother at that time requiring all his attention. "In about twenty minutes, I took it from the vessel, where it had been completely covered with fluid, in order to examine it, and, while taking its measurement, saw, distinctly, pulsation both in the thorax and fontanelles, and, after watching it for a few seconds, saw it open its mouth and make inspiratory movements, as if gasping for breath. The pulsation continued for some time, even after I had wrapped it in a napkin and carried it to my residence, (about five minutes' walk,) where it was also witnessed by several other medical men."

Can any one say what is the full import of these symptoms, and whether anything more than organic vitality can be predicated upon them? It is not purposed to follow out, here, this train of thought, which would necessarily lead to metaphysical abstractions of no practical value in the present stage of science. But, in a medico-legal point of view, it is important to have some definite and restricted definition of life, as distinguished from purely cellular vitality, which is simply a physiological condition. In cases like the one of Fish *vs.* Palmer, where there is necessarily room for much discussion, and in which, unless there be collateral evidence of a decisive nature, there must always remain doubt, it would be better to have some technical definition, which, however much it may be open to criticism, shall decide conclusively concerning it.

This is rendered all the more necessary, from the fact that there is no symptom at present known, which can be considered indubitable and conclusive proof of the presence of life. Numerous tests have been suggested and tried, but each one has been found open to more or less objection, the results being found, in certain cases, too fallacious to be reliable. The organs of

digestion, the bladder, the liver, and the lungs have been made the bases of such tests.

We may pass all the former by, as entirely unreliable, except as substantiating other and stronger proofs, and come to the last named, *viz.*:—those by the lungs. Of these there are several—DANIELS' based upon the absolute gravity of the lungs, and the various changes induced by respiration; PLOUQUET'S, which takes into account the relative weight of the lungs to that of the whole body, and the alteration in that weight by the act of breathing, etc.; and others.

The hydrostatic test (by floating) is the one which has met with the most favor, and which is still relied upon to a great extent. But this, like all the others, is by no means infallible, and numerous arguments might be adduced against its sufficiency. It will be enough here to remark, (1.) That the symptoms afforded by the hydrostatic test may be artificially produced; as, for example, by inflating, by decomposition, etc. (2.) On the other hand, some children have lived many hours, and yet but very few vesicles were found developed in the lungs.

All the tests which have been alluded to, have their foundation in the assumption that a new-born infant cannot breathe until after it has left the uterus. But the recorded occurrences of the *vagitus uterinus* are sufficient to show that this assumption is not borne out by fact. Hence, even if we possessed a satisfactory and reliable test for the occurrence of respiration, the fact that this had taken place, would not be enough to establish proof of extra-uterine life. It is, of course, extra-uterine life which must be proven, as there are many circumstances which may occur during labor sufficient to destroy life. The legal bearing of these points is obvious; as, for example, in cases of suspected infanticide.

The law of France makes (one?) full and complete respiration its legal definition of life. We have already seen some of the difficulties which must attend an attempt at proving this to have taken place, in cases where doubt exists. In addition to what has been mentioned, there is the fact that many children do not breathe for some time after birth, and yet live. With

this fact every practitioner of obstetrics is, more or less, practically familiar.

The tendency of our common-law authorities, at present, is to require that an "independent circulation and existence" shall be proven, in order to constitute life.* The term "existence" implies nothing more than an abstract, passive condition; if independent, characterized by independent circulation and respiration, then the presence of active life may be considered as proven. From what has been said above, it will be seen that this definition is really the only admissible one, so far as our present knowledge goes.

Under this definition, and covered by it, come the relevant questions of "viability" and "adequate vitality." If a fœtus has not yet attained that age and growth (development) which is necessary for the continuance of its life out of the uterus, it has not the faculty of independent circulation and respiration. So, too, in cases where absence of the skull, or of the brain, (anencephali,) fissures of the spine, or similar want of development, would show absolute inability for the continuance of life. With these points we have nothing here to do, as they are subordinate to the question of the evidences of life as an independent existence.

Enough has been said to show the difficulty and uncertainty of this question. Its importance will not be gainsayed, although, fortunately, the cases in which the practitioner is called upon to decide such questions are comparatively infrequent. But none the less, therefore, is it incumbent on the medical man to study well the boundaries and distinctive features which may at any time have to decide important questions affecting humam happiness, property, and life.

The following points, then, with regard to this subject, may be considered as established:—

1. Every organ in the body is endowed with the property of irritability.

2. This property is resident in the organic molecular cell of

* Wharton, Criminal Law, §874, where a full list of authorities are referred to, and may be found specified. Cf. §§710 and 942.

the tissue. These cells may, therefore, be considered as so many vital units of organization.

3. The phenomena manifested by each organ, on the occurrence of an irritation, constitute its individual and distinguishing properties.

4. These properties of the tissues are, in themselves, considered independent (*a.*) of consciousness; (*b.*) of the *vis incita*, termed "life;" and (*c.*) of nervous integrity, except, of course, with regard to the nerve-tissue itself, as a distinct organ.

5. The sole requisite seems to be the presence of active organization—elements of nutrition not yet yielded up to chemical laws.

6. The occurrence of muscular contraction, or performance of other like functions, must, therefore, be considered as simply dependent upon the organic vitality resident in the cells of the tissue or organ; and the performance of such functions cannot be held as evidence of anything more than cellular vitality.

7. Hence, in the present state of our knowledge, nothing less than an independent circulation and respiration can be accepted as constituting "life," in the ordinary acceptation of the term. If these can be proven to have existed, even for an indefinitely short time, the question of life may be considered as decided in the affirmative.

Much more space than is here permitted, would be required to do justice to the above subject. In what has been said, the aim has not been to present things original or unknown to the profession, but to suggest further thought and inquiry upon a subject which is, perhaps, too apt to be neglected in the round of daily practice.

ABSCESS IN THE TESTICLE.

By M. M. EATON, M.D., of Peoria, Ill.

The extreme rarity of cases of this nature, causes me to place this one on record. Not that I have any new theories to offer, or treatment to suggest, but simply to aid in adding to the great storehouse of *medical* experience, by reporting such cases of interest as may be read by young members of the profession with profit. The history of this case is briefly as follows, *viz.*:—

A young man, aged 16 years, son of a merchant of this city, was placed under my care, June 4th, 1866. Found him complaining of great pain in the right iliac region, and on examination I discovered a tumor about the size of a large orange in this locality, very tender to the touch; and, on further investigation, I found the right testicle absent from the scrotum, and on inquiry, learned that the young man had, while a youth, about 6 years of age, passed this testicle up into the abdomen; that he had passed the left one up also, but it came down again; the right, however, still remaining in the abdomen, without causing any inconvenience whatever up to about a week since, at which time a physician was consulted, who prescribed for ague, as the patient had complained of a chill and had some fever, the doctor not being aware of any trouble in the abdomen or testicle, as the patient had carefully concealed the result of his foolishness in his early youth, so that even his parents were not aware of his condition. He grew rapidly worse, however, and on the 4th, I was requested to take charge of the case.

I found him with a wiry pulse, 110 to the minute; tongue with a white coat; skin dry; respiration 20 per minute. I applied fomentations of hops over the lower part of the abdomen; gave anodynes, diaphoretics, and diuretics, in connection with powders, every three hours, of hydrg. chlo. mit. gr. ij, opii pulv. gr. j. M.

June 5th. Seemed much improved. Pulse 100, and softer; skin moist; tenderness of abdomen less; suffering but little

pain. The bowels not having moved, I ordered pill comp. cathar. No. ij, every four hours.

June 6th. No movement of bowels; pulse more wiry; commenced vomiting. Ordered injections of warm water, and continued diaphoretic mixture, and gave pill opii, gr. ij, every four hours, with ipecac in solution, $\frac{1}{2}$ gr. doses, to arrest the emesis and control the severe pain.

June 7th. Patient worse. No operation from several enemata that had been used. Tenderness over the whole abdomen; emesis continually, consisting of some fœcal matter, with water; complains of great thirst—the water drank is immediately rejected. Applied sinapism over the epigastrium, and gave plumb. acet. in solution, to arrest the vomiting.

June 8th. Patient worse every way. Passed air from the bladder with the urine. Used stimulating enemata with no success.

June 9th. Patient died. I requested a *post mortem* examination, in order to ascertain what condition the testicle really was in. My request was granted, and 12 hours after death I made the autopsy, assisted by Drs. J. MURPHY and J. HAMILTON, also, Drs. HIATT and POTTS.

We found, on opening the abdomen, large quantities of pus diffused throughout the entire peritoneal cavity, and on examining the testicle, which was retained in the abdomen for so long a time, enlarged from inflammation to about ten times its normal size, containing a cavity nearly as large as itself, which was open one side, through which the pus found in the peritoneal cavity had evidently escaped. The bladder was in a healthy condition; the kidneys normal; the liver slightly enlarged; the spleen healthy; the peritoneum intensely congested and softened; the duodenum softened through its muscular coat, so that it was torn by very slight violence; extensive evidence of inflammation throughout the entire tract of the alimentary canal, but no obstruction existed. The testicle was not removed, which I regret, as it would have been an interesting pathological specimen.

The bladder was inflated after drawing off two ounces of

healthy urine, and found to be impervious. How shall we account for the gas which had been expelled through the urethra previous to death?

I am inclined to believe that, as the urine and bladder were in a normal condition, the gas must have formed in the inflamed testicle and passed through the spermatic duct into the urethra, and from thence expelled with the urine.

Another question may be asked:—Why did this retained testicle take on inflammatory action at this time, after having remained so long in its unnatural situation without producing any effect whatever on our patient?

I answer, that, in my opinion, the expulsion of the seminal fluid was prevented by the peculiar situation of the testicle, and that, in consequence, this fluid being retained in the testicle, it became an irritant, a foreign material causing the inflammatory action in the testicle and the resulting abscess, and the reason why this state of affairs had not long ago existed is found in that our patient had only recently arrived at the age of puberty, and, consequently, until recently, no seminal fluid had been secreted.

I do not wish to be understood as saying that where a testicle is retained in the abdomen until adult age, inflammation of the testicle is a certain result: for I know of a gentleman, at the present time in this city, the father of a fine, healthy family, who has one of his testicles retained at the internal abdominal ring, and it has never troubled him; but that, where, from any cause, the spermatic fluid is prevented from leaving the testicle, it must necessarily bring on inflammatory action.

This case may also be instructive, in that the symptoms during the last three days of our patient's life were such as are described where some obstruction exists in the course of the alimentary canal; so much so, that the case was diagnosed by a very eminent and experienced physician, who saw the case with me on the day he died, to be one of invagination of the intestine, or, certainly, one of obstruction from cause. But, as I have stated, nothing of the kind was found to exist, although very diligent search was instituted.

IRRIGATION OF THE NASAL PASSAGES.

By H. A. JOHNSON, M.D., Chicago.

The readers of the EXAMINER are, no doubt, aware that the nasal passages may be irrigated, by allowing a stream of water to run into one nostril, passing back behind the septum and issuing from the other nostril, the subject in the meantime breathing through the open mouth; and that by this means medicinal agents may be applied with ease to parts that are reached with difficulty by other devices.

TIEMAN, of New York, has manufactured an instrument especially for the purpose, but its cost is considerable, and for some months I have been supplying my patients with a very simple and cheap contrivance, meeting perfectly the objects in view. It consists of a gum elastic tube three feet in length, to one end of which is attached a hard rubber nozzle, such as is ordinarily supplied to the hard rubber syringe: to the other, a glass tube bent so as to hang over and down into a common water pitcher. This tube is used as a syphon. The pitcher, containing the solution to be used, is placed about two feet above the head of the patient, and, the tube having been first filled with water, the bent portion is placed in the solution, and, holding the other extremity between the thumb and finger so as to control the current, the nozzle is placed in one nostril, and, the pressure being removed, the solution passes through the nares and issues from the other nostril.

In chronic disease of the passages, and especially where they become filled with accumulations of dried mucus, I have obtained excellent results from this treatment.

Solutions of chlorate of potash, chloride of zinc, bromide of ammonium, etc., may be used and in large quantities.

The first effect is usually mechanical, the removal of the accumulated matters. When this is accomplished, the medicinal effect of remedies addressed to the vital properties of the tissues will be more certainly realized.

611 Wabash Avenue, Aug. 15, 1866.

Selections.

ON CHOLERA.

By A. CLARK, M.D., Professor of Pathology and Practical Medicine, College of Physicians and Surgeons, N.Y.

THE TREATMENT OF CHOLERA.

We may now inquire whether any treatment is curative in the several stages of cholera. It is generally believed that the diarrhœa of the first stage, if sufficiently prolonged to permit the application of medical precepts, is as easily cured as a diarrhœa of any other kind. This is not quite true. A diarrhœa in cholera seasons is more dangerous and less uniformly manageable than in ordinary seasons when cholera is not prevailing. At the same time, here is the great field of professional usefulness; this is the period of the disease when cures should be effected. Then what are you to do? First, send the patient to bed, and let him have the advantage of warmth and rest in the recumbent position. It is well to obtain a little diaphoresis —not profuse sweating, but a soft skin, or gentle perspiration, such as may be caused by a warm bath, or better, by a foot bath. The administration of cathartics is not generally thought proper; and this is especially true of the salines. Indeed all cathartics, while cholera is threatening, should be avoided as far as possible in those not attacked. Many an instance has come to my knowledge of cholera apparently precipitated by the administration of medicines of this class. Castor-oil is the least objectionable, and I can conceive may, under certain circumstances, be serviceable; for example, when a diarrhœa has been provoked by accumulated fæces in the intestines, or by errors of diet, or by the indigestable portions of certain fruits. In general, the first aim is to check the diarrhœa. Among the medicines that we use for this purpose, opium or an opiate almost always finds a place. A favorite prescription in past epidemics is the following:—"Tinct. opii, spt. camphor, tinct. capsici, tinct. catechu, tinct. caryoph., equal parts. Of this a teaspoonful more or less frequently according to the urgency of the symptoms.* Those who entertain the view that this

*Dr. Squibb, in "Advice upon Epidemic Cholera," lately published, gives the following formula, which he thinks more useful by the addition of chloroform. He proposes to call the preparation the "Compound Tincture of Opium" or

is a disease which replaces miasmatic fevers, advocate the use of quinine. Indeed, it is claimed that quinine alone will suppress the discharges. The astringent preparations of iron have some reputation, as the peritrate, or the persulphate, with or without quinine. A pill that Dr. Houston thinks as serviceable as any, is made up thus:—Acetate of lead and camphor, each twenty-four grains; acetate of morphia, two or three grains; oil of cinnamon, five drops; mucilage of gum arabic, sufficient. This is made into twelve pills, and one to be given every two, three, or four hours, according to the nature of the case. Another favorite prescription is what is called Hope's mixture. Its composition is as follows:—Nitric acid, one drachm; camphor mixture, eight ounces; these to be mixed, and afterwards the tincture of opium added to the amount of two scruples. One quarter of this makes a dose, to be repeated more or less frequently. If the diarrhœa begins after a surfeit, or there is reason to suppose there is undigested food in the stomach, a quick emetic is regarded as important. Alum, the aromatic confection, the compound spirits of ammonia, chalk mixture, hæmatoxylon, kino, and calomel in grain doses, are in the list of remedies for this stage; each, however, is given with opium or its tincture. But none of these medicines, regarded as astringents, are as highly valued by the English physicians as the acetate of lead. It is given with opium, one to eight grains of the acetate, and one-quarter of a grain to a grain of opium; in the small doses every hour. Some physicians claim success in the use of the pulvis cretæ compositus cum opio; others prefer hydrargyrum cum creta, and Dover's powder. These will, some of them probably, answer your purpose; but rest in bed is regarded as more important, perhaps than any special medication.

Passing to the serous diarrhœa—the symptom soon attended by cramps and vomiting—the question comes whether any particular remedy is specially serviceable. Dr. Fuller—the same, I believe, who has made a high reputation by his treatise on rheumatism—holds that sulphuric acid, first suggested by Mr. W. S. Cox, of Kensel Town, England, has almost sovereign power over this stage of the disease. His mode is to add to eleven ounces of water one ounce of dilute sulphuric acid, and to

"Diarrhœa Mixture." It is tincture of opium, spirits of camphor, and tincture of capsicum, each one fluid ounce; purified chloroform, three fluid drachms, and a sufficient quantity of stronger alcohol to make the whole measure five fluid ounces. He advises a teaspoonful as a dose, to be taken after each stool. If the diarrhœa increases he would double the dose. The mixture is suggested for popular use till a physician can be obtained.

give of this three tablespoons every half-hour; and he claims that it is infallible; but we hear of so many infallible remedies for cholera in its various stages that we have come to doubt infallibility, even in Dr. Fuller. With this, he sometimes combines in the alternate doses, half a drachm to a drachm of chloric ether. He occasionally commences the treatment by administering two grains of opium. He sometimes adds five grains of calomel in one dose. He also employs sinapisms to the stomach, and friction to the extremities. This treatment has the support of some good names in England. M. Worms, of Gros-Caillou Hospital, uses sulphuric acid in sweetened water, one part to three or four or five hundred, as a drink, and attaches great importance to it. Dr. Hutchinson, however, in 1854, says:—"Sulphuric acid, so highly recommended by Dr. Fuller, was prescribed, but without any benefit."

Sulphur in substance has been proposed, and the suggestion comes from the idea entertained by some persons that the disease is caused by vegetable fungi. Dr. Grove takes of precipitated sulphur, one drachm; bicarbonate of soda, one drachm, compound spirits of lavender, six drachms, and of water two ounces, to make a mixture; of this he gives a tablespoonful every half or quarter of an hour. This is for him a most serviceable remedy. He says that it checks the serous discharges and restores warmth. He refers to the experience of some of the Scotch people, who treated themselves for what was supposed to be cholera with great success, using only brimstone and whiskey. He refers also to the *London Practice of Physic*, 1692, in which sulphur and the alcoholics are spoken of as the only means of curing a severe and fatal diarrhœa which prevailed in England about that time. The suggestion of Dr. Grove has the support of Dr. Cormack, and may be tried; but I fear it will share the fate of all cholera specifics.

Creasote, says Dr. Cormack, if the patient does not refuse to take it on account of its odor, hardly ever fails to arrest the serous discharges. Two or three drops given every hour or two, it is claimed, will constrict the vessels and stop the diarrhœa. This may be the language of hope, but it is not the language of science. That creasote may be serviceable is very possible; but to say it hardly ever fails, is but to bring discredit on him who says it.

In the treatment of the third stage of cholera, chloroform has gained considerable reputation. It was used by the late Professor Horner, of Philadelphia, in the cholera of 1849, and used with some success. Dr. Hartshorn, of Philadelphia, has

presented to the profession what he regards as a useful formula:

℞. Chloroform,---------- f ℥ ij.
Spt. Camph.,----------
Tinct. opii, āā,---------- f ℥ iss.
Ol. cinnamon,---------- gtt. viij.
Alcohol,---------- ℥ iii. M.

Professor Horner and Dr. Hartshorn gave chloroform in collapse, a few drops every few minutes, combined with camphor and laudanum, and the latter thinks its success extraordinary. Of Dr. Hartshorn's prescription five to thirty minims or more are to be given, with ice internally and warm applications externally. Dr. Davies (Dr. Gull's Report) had at one time very great confidence in chloroform in the stages of serous diarrhœa and in collapse, and gave it in doses of seven to ten drops every quarter or half-hour, claiming very great success; in nine cases of cholera and thirteen of the worst diarrhœa, only one death; in fourteen cases treated by Mr. Tower, under Dr. Davies' observation, only one death, and so on. In subsequent reports his trust in chloroform is gradually more and more shaken, till in his fourth and last he says he has lost confidence in it when used alone. On the whole, summing up all the reported experience which I have been able to find, it cannot be claimed that this medicine has any great curative power. It often allays the vomiting and cramps, and is worthy of further trial. Chloroform has been used by inhalation, and the effect of its use in that manner is to allay the cramps and suspend the vomiting, but unfortunately the patient must be kept continually in a state of slight anæsthesia, or these symptoms will return. Its administration does not seem to have materially diminished the mortality from cholera, though it has doubtless rendered the disease less painful, and may be worthy of use for that purpose.

Strychnine is very warmly advocated by Professor Fraser, of McGill College, Montreal, to be used in impending collapse, together with the means which tend to stop the discharges. He reports twenty-five cases treated by it, in doses of $\frac{1}{38}$ of a grain, dissolved in acetic acid and alcohol, repeated every quarter of an hour, sometimes every five minutes, until six or twelve doses are given, or till there is a reaction or specific effects. Twelve doses would make one-fourth of a grain. He thinks it has great power in sustaining the action of the heart and capillary vessels. His success he reports as twenty saved; and of the five others, one only died in collapse, the others in

the stage of reaction. I have had no experience with the drug given as here suggested; but as it was used together with means to stop the discharges, and these means are not specified, it is pertinent to inquire how the credit of these cures should be divided. The suggestion was made near the end of the last epidemic (1854), and there has been little opportunity to test its value.

Now, of collapse. *Electricity* has been tried. It seems to revive the energies for a little time. The current has been passed from the neck to the epigastrium, to excite the action of the diaphragm, and from side to side to stimulate the heart.

In one patient of Dr. Peacock, a child, the temperature in the mouth, rose from 88° to 92°, and the pulse became fuller under the influence of this agent, and the patient recovered; but the same physician was not able to sustain this success. Galvanism has a similar power. But, all considering, we may say of electricity and galvanism, that while in collapse they have the power of increasing warmth and bringing back the pulse temporarily, it is doubtful whether they have yet saved a single life. The *wet sheet*, used after the manner of the hydropathists, was tried pretty extensively in England during the epidemic of 1849. The result was a slight reaction, but it did not gain the grade of a curative agent. *Affusions* have been tried. Patients have been placed in a warm hip-bath, and both warm and cold water suddenly poured over the head, shoulders, and body. This is done quickly, and the patients are immediately placed in bed, in warm blankets. This plan has the power of producing some reaction, and is on the whole thought favorably of. Its effects are said to be better than those of the hot bath. *Oxygen* has been used in collapse by inhalation in a few instances, but it does not seem to have gained favor, because the temporary good effects have been followed by unfavorable results. The patients have almost all died. *Counter-irritation.* —Caspar dipped clothes in alcohol, laid them upon the abdomen, then set them on fire; but the patients did not get well for all that. Indeed it is striking that this sort of cauterization did not seem to produce much redness upon the surface to which it was applied. Milder counter-irritation, however, is generally resorted to; stimulating applications and warmth in various ways; mustard to the abdomen, the legs, and chest, particularly to the epigastrium, is hardly ever omitted. I do not suppose we can say that rubefacients, so used, have been of any *signal* service. They have the negative merit of innocence, and probably the positive one of arousing, in some degree, the failing nerve

powers, and of quickening somewhat the capillary circulation. *External warmth*, notwithstanding it is often disagreeable to the patient—notwithstanding his cold arms feel heated—is pretty generally received with favor. A moderate degree of artificial heat aids in restoring to the body its natural temperature, and improves the chances of recovery. *Emetics* have been proposed—of common salt, or mustard, or sulphate of zinc, or ipicac.; and the result of experience seems to be that they do to a certain extent arouse the heart to activity, that they bring a little warmth to the surface, and for a moment distribute the blood a little more evenly through the body. But they are not curative; their effect is temporary, and the discomfort they produce is often considerable. They may be useful in another way. One who has seen little of the disease can hardly understand why the vomiting it produces should not prohibit the use of emetic drugs; but that vomiting, though it may cause the ejection of a great deal of fluid secretion from the stomach, is not forcible and violent, and often leaves undigested food in the organ. This is demonstrated in examinations after death. Such undigested food has been found after two days and more of vomiting. To remove this is to remove a source of irritation, and an emetic will often do it. *Ice, and cold drinks.*—A distinguished writer on the treatment of cholera remarks that it is gratifying to find that the experience of the last epidemic has confirmed the whole profession in the use of ice and cold drinks for those in collapse and approaching collapse. The burning thirst is allayed by swallowing portions of ice. It is true that we have to contend with the disposition to vomit; but the chances of the patient seem to be improved in two ways—by relieving suffering, and supplying to some extent water, which his blood lacks. Cold drinks and ice, then, have been received with extraordinary favor; and though not heroic measures, if they palliate only, they give nature a better opportunity to do a kind act. Dr. Murray, in India, states that *injections into the rectum, at a temperature of* 120°, were in his hands of great service in restoring warmth to the body and giving force to the pulse. He used a weak solution of common salt and carbonate of soda, a pint at a time, and repeated it every half-hour, or less frequently. The injections were usually retained but a few minutes, yet sufficiently long to produce recognizable effects. It may seem that giving cold fluids by the mouth, and heated ones by the rectum, cannot both be defended; that one would neutralize the effects of the other. But cold applied to the mucous membrane, in the upper part of the alimentary canal,

diminishes the hyperæmia, the irritation, and the vomiting: while the injection falls upon a membrane less likely to be engorged, and probably increases the warmth of the body without doing any local mischief. Dr. Joel Foster, of this city, informs me that he has used warm injections for this purpose with advantage, and thinks he can cause them to be retained for a longer time by holding a compress against the anus.

Considerable success has been claimed in behalf of a *saline solution*, first proposed by Dr. Stevens, then of Jamaica. Believing that analysis showed some loss of saline constituents of the blood, it occurred to him that these could be restored by administering salts dissolved in water whenever the patient could retain liquids. Drs. Gull and Baly inform us that at the Cold-Bath Fields Prison other modes of treatment were tried, and the patients all died; the number was not very great, however, treated by other plans; for after five or six had died, the physicians adopted Dr. Stevens' method. The result was, that of patients so treated in the prison hospital, and in a lane in the neighborhood, forty-four out of forty-six recovered. This would be extraordinary success if the patients were all in the dangerous stage of the disease. Figures, as I have said, are uncertain guides when not attended by full explanations; yet we have but little else to trust, and so must do the best we can with them. The mixture used on this occasion was, bicarbonate of soda, half a drachm; common salt, one scruple: chlorate of potassa, seven grains; repeated every hour in such quantity of water as might seem expedient at the time of prescribing. Another solution has been used also, which is: common salt, half a drachm; tartrate of soda, twelve grains; phosphate of soda, eight grains; dissolved and taken at a draught. With reference to the appropriateness of these prescriptions, I may say a word when I come to another branch of the subject. This saline treatment of Stevens, though received with extraordinary favor in certain places, has not been successful in others, and the summing up by Gull and Baly is substantially this, that while at times it seems to have aided recovery materially, at other times it seems rather to have increased the evacuations and the danger. It has at least this merit—that when it is mainly relied upon, more dangerous medication is avoided. *Camphor* is a medicine that has been used pretty extensively in all the stages of this disease. In the collapse it has the reputation of allaying the cramps in a certain degree, and lessening the irritability of the stomach, and consequently the vomiting. It is certainly a safe medicine,

and is believed to be as good a diffusible stimulant as can be used; and given in solution in chloroform, is perhaps of some advantage.

I have here a manuscript paper which was sent me in 1854 or 1855, by Dr. O. H. Smith, then of Williamsburgh, now of New York, giving a summary of the treatment of cholera in the hospital of which he had charge in 1854. It contains one statement which I think is worthy of consideration. I present it to you in his own words:—"Sulphuric acid, so highly eulogized by Dr. Fuller, of St. George's Hospital, was prescribed, but I could get no good results from its administration. Strychnine, as recommended by Prof. Fraser, of McGill College, was given, and I think it may have had some effect in postponing the period of collapse; but I do not think it had any control over the rice-water evacuations. I gave this remedy in view of the opinion that cholera poison acts especially on the ganglionic nerve centres of the abdomen; but its effects were such that I put it down as a doubtful as well as dangerous remedy. I tried the oxide of bismuth. It seemed to have no control over the watery discharges; but I think it relieved to some extent the retching and vomiting, so constant after the discharges had been arrested. In all cases the abdomen was enveloped in strong mustard poultices." Dissatisfied with all these agents and means, except the last, Dr. Smith turned to brandy.* "To restrain the rice-water evacuations," he says, "I have ordered an injection into the bowel, containing an ounce of brandy, two or three ounces of strong tea, and five or ten grains of the sugar of lead, to be repeated after every discharge. At the same time I ordered a soft pill, containing quinine, calomel, and camphor, of each half a grain, to be given every fifteen or twenty minutes; the whole abdomen being covered with mustard poultices. The patient was also directed to take brandy and water every five minutes by the mouth." The vomiting and dejections soon ceased. The feature of this treatment which has been but little if at all tried, is the injection of diluted brandy into the intestines, and it is to this that Dr. Smith attaches chief importance; but he found that brandy diluted with water was equally beneficial. His results induce me to commend his

* I have to-day (July 18) received a letter from Dr. Smith, in which he informs me that Drs. Walser and Bissel, in the quarantine ships, speak favorably of brandy injections; that Dr. Otis and McLean have each treated a case on his plan with good results. These cases will be published in the *Record*. Dr. Dalton, Sanitary Superintendent, informs me that as far as he can judge from three or four cases reported to him, there is a probability that these injections will be useful.

method to further trial, notwithstanding the general opinion which is adverse to the use of stimulants of this kind during the particular stage of which we are now treating. Dr. Smith here reports the cases of two children having rice-water discharges, to whom the parents administered two or three tablespoonfuls of brandy in each case, and made the children fairly "drunk;" the discharges ceased—none occurred after the full effects of the brandy were felt. These cases taken alone, would argue strongly in favor of brandy and the free use of it. But two cases will hardly affect a rule derived from the observation of several epidemics.

There is another mode of treatment, if it can be so called. A considerable number of physicians having charge of cholera hospitals, observing the ill-success of all plans of treatment, have felt justified in leaving a number of patients without any treatment besides cold drinks and ice to satisfy their thirst, and proper bedclothes. Dr. Hutchinson says, referring to some he left in this way, that "The most valuable experience derived from the observation of the recent epidemic (that of 1854) is, that cholera patients should be disturbed by remedies as little as possible. And when in any case we are at a loss to known what treatment to adopt, or if we find the patient growing worse under the influence of remedies that we think best adapted to the case, the better plan is to rely on the *vis medicatrix naturæ*. This I have repeatedly done with much satisfaction; patients in the deepest collapse having reacted without any treatment; in one case without even ice, beef-tea, or external applications." Again he says:—"When the vomiting proved obstinate, nothing but lumps of ice and teaspoonful doses of beef-tea were allowed; but frequently even these were withdrawn, and the patient permitted to remain unmolested by any kind of treatment for twelve, fifteen, or twenty hours, with the most satisfactory results, even when there was great depression of the circulation, the skin cold and cyanosed, and the rice-water discharges continuing." Other physicians have made similar statements. Dr. Hutchinson's mortality was, however, not very light. He treated one hundred and seventy patients in his hospital, of whom ninety-seven died; eighteen were in the first stage, and all recovered; seventeen were in partial collapse, of whom one died; one hundred were in complete collapse, of whom eighty-two died; five died in the consecutive stage out of nine; and nine of other diseases, including diarrhœa, out of twenty-six. It does not seem then, do the best we can, that we have any great control over this stage of collapse.

Now a few words regarding injections into the veins in collapse; not because they have been established as useful, but because the results, however temporary, are very interesting. The plan was first proposed and put in practice by Dr. Latta, of Leith, Scotland. He used a saline fluid. He adopted for his injections this formula:—two or three drachms of common salt; two scruples of subcarbonate of soda, in six pints of water, to be injected at a temperature of 112°. He selects this temperature because, he says, if it is cooler it produces a chilly feeling in the patient; and if it is much warmer, even as warm as 115°, it stimulates the heart too much, and produces a sense of weakness and fainting, The report of his first experiment I will read you in his own words:—

"The first trial was made upon an aged female, whose case was utterly hopeless (indeed he feared she would die while he was making the preparation). Having inserted the tube in the basilic vein, anxiously I awaited the effects; ounce after ounce was injected, but no visible change was produced. Still persevering, I thought she began to breathe a little less laboriously. Soon the shrunken features, and sunken eye, and fallen jaw, and face pale and cold, bearing the manifest impress of death's signet, began to glow with returning animation; the pulse, which had long ceased, returned to the wrist, at first small and quick, but by degrees becoming more and more distinct, fuller, slower, firmer; and in the short space of half an hour, when six pints had been injected, she expressed herself in a firm voice, saying she was free from all uneasiness; she actually became jocular, and fancied all she wanted was a little sleep. The extremities were warm, and all the features bore the aspect of comfort and returning health (but hear the sequel); the purging and vomiting soon returned, and she died five and a-half hours after the operation."

This unfortunately, is the history of very much the larger number upon which this experiment has been performed; of almost all. Dr. Baly says he has attempted this medication in six cases, and all have died. Dr. Streeter says that the experience of the epidemic of 1849, in England, has settled the question, has determined the inexpediency of a resort to these injections. Dr. Latta, however, reports another case. It is his first, perhaps his only, successful one. The patient was a female, aged fifty, whose condition was hardly more hopeful than that of his first case. He injected one hundred and twenty ounces of the solution, the effect of which was magical. He says:—"The restoration appeared to be complete, but the diar-

rhœa returned, and in three hours she was again prostrated. Again he injected one hundred and twenty ounces of the same solution, and again he had favorable results. In twelve hours three hundred and thirty ounces had been injected, and the reaction was fairly established. In forty-eight hours she smoked her pipe. She was afterwards taken to the hospital, where she had some typhoid symptoms, but finally became convalescent." Dr. Lowery states that he has performed this operation twenty-six times, and had four successful cases, and believes that the injections must be introduced slowly. If as good a result as that can be obtained with any degree of uniformity, it would seem proper to resort to the operation, because cases in extreme collapse are the only ones on which it is ever attempted—cases regarding which there can be entertained no reasonable hope from any other method of treatment.

Dr. Johnson states in his "Notes," that Dr. Mackintosh has performed this operation on 156 patients, having had 25 recoveries and 131 deaths, and thinks that such a mortality is "frightful." It corresponds very nearly with that of Dr. Lowery's cases; and supposing all the patients to have been *in extremis*, I should be unwilling to adopt this epithet. It may be true "that if all these 156 patients had been left without treatment a larger proportion would have recovered; but it is at least a fact worth knowing, that about one in six of those whose veins have been filled with this very crude imitation of blood constituents could survive the experiment. To my mind it gives the hope that a better method may be attended by greater success.

It is reported, though I don't know who performed the operation, that in 1832 there was a single successful case in this city. Drs. Gull and Baly, in summing up the history of this treatment, seem to be of the opinion that it is worthy of further trial; though Dr. Streeter regards it as completely condemned. Dr. Hutchinson used saline injections in five cases, "but with only temporary benefit." Yet he thinks that when a proper liquid is found, the proper temperature determined, the rate of injection and the quantity fixed, and when skill has overcome the difficulties attending so delicate a procedure, it may still be capable of saving lives that would otherwise be lost. He used a solution containing three drachms of common salt and one drachm of alcohol to a pint of water, at a temperature of 100° to 115° injecting two pints; and repeating when the algid symptoms returned. He also used the solution by Dr. Gull which I will give you directly. But here let me remark that it

does not seem to me that a complex formula for the preparation of the fluid for injections is at all necessary. The object, of course, is to restore that which has been lost—and that is chiefly water; the evacuations from the bowels and the vomit are composed chiefly, as you will remember, of water, salt, and albumen, or albuminose. Then there is the intestinal epithelium, and nothing else of importance. In the examination of the blood, most analysts, except Dr. O'Shannessy, have reported an increased proportion of saline materials in the fluid which remains in the body. If there is then an increased proportion of saline materials, what the blood really wants is water, and not salts and water. If I were about to attempt an experiment of this sort, I would use either simple distilled water, or water with a very little common salt added.* Dr. Gull's formula is as follows—chloride of sodium, six parts by weight; chloride of potassium, the same quantity; phosphate of soda, three parts; carbonate of soda, twenty parts; of this mixture of salts one hundred and forty grains are to be dissolved in forty ounces of distilled water, and filtered. Filtering is important, because dust gets into all these substances when exposed.

I have here a pamphlet, published in Canada in 1854, containing a report of seven experiments of injecting cow's milk into the veins of persons in a collapsed state. The report is drawn up by Dr Borell; four of the trials were made by himself. He had two recoveries. A friend, who attempted it in three other cases, failed in each. The experiment was conducted in this way. A cow was brought near to the sick person, and the milk was used of the natural temperature and immediately; the bowl which held the milk was warmed and the syringe was warmed. The amount of milk used was eight to twelve ounces. My impression is, that the quantity of fluid should be considerably increased; it does not correspond at all, in these experiments, with the quantity of fluid usually lost in the dejections; yet the success is two in seven. In the other cases there was some revival of the vital powers, but they sank again; whether they would have been again revived had the injection been repeated, we cannot now decide. The pamphlet is an interesting one, containing the reasonings by which Dr. Borell came to the conclusion that it would be safe to inject milk into the veins.

Dr. A. N. Gunn, late Health Officer of this port, stated in the Academy of Medicine, since these lectures were delivered, that in 1832 injections of saline fluid were unsuccessful in the Hospital to which he was attached as assistant, and had been forbidden; and that afterwards, as he believed, three or four patients were saved by injecting into the veins pure warm water.

I return once more to Dr. Johnson, to state to you his views of the treatment of cholera. You will recollect that he regards the evacuations as salutary in eliminating the poison that oppresses and may overwhelm the vital powers. I may here say that this is not a new opinion. Dr. Johnson does not claim that it is original with him. Many physicians have been led to the same conclusion, some of whom he quotes. Dr. Hutchinson, whose paper I have often referred to, a close observer has come to the same conclusion. He says:—"Whenever a patient was admitted into the Brooklyn Cholera Hospital with copious and frequent vomiting and purging, especially of rice-water fluid, if the discharges were not involuntary, a favorable termination usually occurred, and *vice versa;* and instead of death being the consequence of such symptoms, the conclusion seems more rational that they are curative means adopted by nature to eliminate the poison from the system. Instead, therefore, of arresting the discharges, it was deemed best *to let them stop.*" Dr. Johnson goes beyond this; he is not satisfied to let them stop, but would augment them by mild cathartics, emetics, and enemata. He asks us to admit that calomel, if it cures, acts not as an alterative, or sedative, or cholagogue, but as a cathartic; that the saline mixture of Dr. Stevens is really efficacious, not because it restores the lost salts, but because it is a laxative; and he urges that the English physicians in India treated the disease with more success than the European physicians, because they were not afraid to give catharties and at the same time call them by their right name. Dr. Johnson, in 1855, reported fifty-four cases of cholera and choleraic diarrhœa treated on this plan.—(*Epidemic Diarrhœa and Cholera, &c.*)

I have examined with some care these cases, and I am compelled to admit that I do not know any detailed reports that give better results. It is not to be forgotten, however, that the cases all occurred between the 11th of August and 28th of September, 1854; in other words, in the decline of the epidemic in London. The seventeen cases of choleraic diarrhœa all recovered; and of thirty-seven cases of cholera, all reported to have been in collapse more or less severe, twenty-three recovered. Many of these cases appear to me to have been mild; some that were considered as in collapse present very few of the symptoms of that state, but the cases numbered 2, 7, 8, and 48 were severe enough to test the virtues of any treatment, and they recovered. The great feature of the treatment is the administration of castor-oil in half-ounce doses every half-hour for several hours, then the same dose every hour, and later

every two or three hours. Thus varied in frequency, these doses are continued usually from one to four days. In one instance recovery followed ounce-doses given every hour till five were taken. In one case (8) of extreme collapse, a girl nine years old took fourteen doses of an ounce each between 7 A.M. and 5½ P.M., then after an interval of nine hours she took seven half-ounce doses in ten hours; at the end of twenty-four hours half an ounce, and three days later another half-ounce, which last portion seemed to stop a diarrhœa that had continued during convalescence. She took in all eighteen and a-half ounces of castor-oil. In another case (17) of collapse, the patient took in half-ounce doses twenty-two ounces of the oil during the first day, but vomited nearly all of it; the second day and following night he took seventeen ounces, very little of which was vomited. The purging produced, the author thinks, was hazardous, but the patient revived. One patient (48) took thirty-five ounces of oil in a little more than four days, having vomited during this time 125 times. This quantity of oil, the author thinks, was twice as much as was required. The patient recovered.

I do not discover in the examination of these cases any precise rule relating to the quantity of oil to be given. If it caused vomiting it was still acting as an evacuant, and was not discontinued for that reason. If it did not act in this manner, an emetic was administered in some of the cases. In full collapse Dr. Johnson seems to prefer mustard and salt as an emetic, and gives it before the oil is taken. When the oil does not prove cathartic, he uses salt and water enemata. In some instances he gave calomel with the oil, two to five grains, and if in the smaller doses, it was repeated three or four times. He applies warmth to the stomach and extremities, and uses other adjuvants, but does not speak favorably of ice and cold water, because he thinks they suspend the elimination of the poison. Such is the plan for which Dr. Johnson asks free but unprejudiced criticism. In the present state of our knowledge theoretical criticism goes for very little. The single question is, will this method save more lives than any other? In Dr. Johnson's hands it has done as well at least as any other of which I have seen the detailed reports; but the trial alone can teach us what it can do at the commencement of an epidemic. He does not claim that he has found a specific for cholera. He says, indeed in "Notes on Cholera," p. 87:—"There is no remedy which has the slightest pretensions to be considered a cure for cholera; no drug or agent which, so far as we know, will neutralize

the poison or lessen its virulence. I have not the faintest hope or expectation that a specific remedy for such a disease as cholera will ever be discovered." While I would not discourage the attempts to cure cholera by evacuants, and do not doubt that Dr. Johnson's results are as satisfactory as almost any that have been published, allowance, however, being made for the stage of the epidemic to which his practice was applied, yet there is a pertinent inquiry regarding the first stage of the disease. How does it happen that agents which restrain the discharges are so efficacious in that stage? It is the almost universal practice to give them, and this of itself is one of the strongest proofs that they are proper and useful. If the poison can be eliminated by emetics and cathartics, it would seem that this is the stage in which they should be most demanded, and in which the agents which suppress discharges would be most harmful. We know but little about the modes in which animal poisons are eliminated; we do not know, indeed, that they are eliminated at all through the evacuations; we know that some of them, or rather portions of them, escape from the body, as in small-pox; but this is not an elimination that purifies the sick man, or relieves him of a single bad symptom. The poisonous principles of typhus and typhoid fevers, of measles and scarlet fever, are not eliminated before the patient begins to recover; for these diseases are communicable during convalescence. The diarrhœa of typhoid fever does not diminish the danger of the patient. Intermittent fever is suspended while the miasmatic poison still remains in the system. There is no evidence whatever that it is in the power of drugs to extract a miasmatic or an animal poison from the body, and so purify it, say what we may of depuration. Still, Dr. Johnson is not to lose the credit of his experiment. Many of his patients recovered while taking castor-oil. That fact will stand, whatever its explanation may be.

Book Notices.

Medical Electricity: Embracing Electro-Physiology and Electricity as a Therapeutic, with Special Reference to Practical Medicine; Showing the Most Approved Apparatus, Methods, and Rules for the Medical Uses of Electricity in the Treatment of Nervous Diseases. By Alfred C. Garratt, M.D., Fellow of the Mass. Med. Society; Member of the Amer. Med. Association. Third Edition, revised and illustrated. Philadelphia: J. B. Lippincott & Co. 1866.

This is a ponderous volume of 1103 pages, published in good style, on good type and paper, and illustrated by 138 cuts.

The work is divided into twelve chapters, embracing the following subjects:—Natural Electricity; Early History of the Medical Uses of Electricity; Electro-Physiology; Electrical Instruments and Apparatus for Medical Purposes; Methods for the Employment of Electricity; Hyperæsthesia; Anæsthesia; Spastic Diseases; Midwifery; Nervous Affections of the Thorax and Abdomen; Feigned Nervous Affections—Sea Sickness; Electricity in Surgery. These headings, with the copious title-page, are sufficient to indicate the extent and great importance of this volume. The subjects of which it treats are among the most interesting and important, both in a physiological and therapeutic view, that can engage the attention of the student and practitioner. How far the author of the present treatise has succeeded in presenting the facts, at present known to the scientific portion of the profession, relating to each topic discussed, we cannot say; for our time has been too closely occupied with the practical duties of our profession to enable us to give the work a careful perusal. Every student and practitioner, however, will be abundantly repaid for the purchase and careful study of the work.

On Spermatorrhœa: Its Causes, Symptomatology, Pathology, Prognosis, Diagnosis, and Treatment. By Roberts Bartholow, A.M., M.D., Prof. of Physic and Med. Chemistry, in Med. College of Ohio; Lecturer on Clinical Medicine, and Physician to St. John's Hospital, Cincinnati, etc., etc. New York: Wm. Wood & Co., 61 Walker Street. 1866.

This is a very neatly printed monograph of 112 pages. The style of the author is clear, concise, and pleasing; and his practical views judicious. In regard to the special pathology of spermatorrhœa, he says:—"The pathological conditions may be comprehended in three groups—genital; cerebral; spinal. In the first, or genital form or phase, which is the most common, there are excessive sensibility of the sexual apparatus, and greatly increased reflex excitability of the cord. In the cerebral form, there are associated with the preceding condition, certain disorders of the mind—melancholia, delusional

insanity, and mania. In the spinal form, the functional derangement of the cord is either excessive and pronounced, or has resulted in organic lesion." With such diversity in the pathology of different cases, there must follow equal variations in the treatment. Hence, the seeker after specifics will find no comfort in reading this work. The rational practitioner, however, will find it worthy of a place on his table.

Editorial.

Chicago Medical Society.—The regular meeting of this Society was held on the evening of the first Friday in August. Dr. E. L. Holmes reported a case, in which he had occasion to have a strong solution of atropine dropped into the eye of one of his patients, at short intervals, for twenty-four hours in succession, when severe and well-marked symptoms of the general effect of atropine upon the whole system began to be manifested, and were continued for a considerable time. Dr. Nelson related a case, in which a solution of atropine dropped into the eye twice, caused a dilatation of the pupil that continued through a period of ten days, but was not accompanied by any general disturbance of the system. These cases elicited additional observations and facts from Drs. Ingalls, Ross, and Davis.

Encephaloid Tumor.—Dr. Bogue presented to the Society a tumor taken from the arm of a young girl in Cook County Hospital. The tumor had first made its appearance after a blow on the forearm, one or two years previous. It was about the size of a small hen's egg, and seemed to originate wholly from the skin. It was soft, somewhat lobulated, nearly destitute of fibrous tissue, and a portion of it examined by Dr. Lyman, presented in the field of the microscope but little else than granules.

Narcotism.—Dr. Wanzer related a case of poisoning by opium. The patient, a married woman, was represented as having

taken two ounces of laudanum, for the purpose of self-destruction. The narcotism was such that the stomach appeared, at first, insensible to the action of an emetic, but dashings of cold water so far aroused the sensibility that free vomiting ensued; after which, the frequent dashing of cold water was kept up for several hours, and the patient recovered.

After some further discussion, the Society adjourned until the third Friday in August.

Mortality for the Month of May.—The mortality report for the month of May, as compiled by the health-officer, is given below. The statistics show an increase of 25 deaths over the corresponding period of last year, the increase being chiefly in those diseases resulting from colds. Consumption, as usual, has reckoned among its victims a large proportion of those who have died. There is no epidemic in the city, and no cases of small-pox have appeared for several months.

CAUSES OF DEATH.

Accidents,	5	Fever, Typhoid,	12
Bright's Disease,	2	Fever, Typhus,	1
Bronchitis,	1	Hemorrhage,	1
Cancer,	3	Hydrocephalus,	4
Childbed,	3	Inanition,	1
Cholera Infantum,	1	Inflammation,	2
Colic,	2	Inflammation of Brain,	4
Congestion of Brain,	6	Inflammation of Bowels,	7
Congestion of Lungs,	3	Inflammation of Bladder,	1
Colds,	2	Inflammation of Lungs,	14
Consumption,	38	Inflammation of Pleura,	1
Convulsions,	23	Inflammation of Kidneys,	1
Croup,	9	Marasmus,	1
Diarrhœa, Chronic,	2	Measles,	7
Diphtheria,	6	Old Age,	6
Disease of Bowels,	1	Poisoning,	1
Disease of Bladder,	1	Rheumatism,	2
Disease of Heart,	5	Rupture,	1
Disease of Liver,	3	Small-Pox,	1
Disease of Lungs,	2	Stillborn,	10
Dropsy,	7	Tumor,	1
Drowned,	4	Teething,	14
Dysentery,	3	Tuberculosis,	1
Erysipelas,	4	Unknown,	31
Fever, Childbed,	2	Whooping-Cough,	3
Fever, Congestive,	2		
Fever, Scarlet,	7	Total,	275

Ages of the Deceased.—Under 5 years, 134; over 5 and under 10 years, 14; over 10 and under 20, 11; over 20 and under 30, 27; over 30 and under 40, 31; over 40 and under 50, 22; over 50 and under 60, 7; over 60 and under 70, 13; over 70 and under 80, 4; over 80 and under 90, 2; unknown, 10. Total, 275.

NATIVITIES.

Chicago,	124	Canada,	7	Switzerland,	1
Other States,	47	Ireland,	26	Holland,	2
England,	4	Scotland,	3	Unknown,	13
Germany,	40	Sweden,	3		
Denmark,	7	Norway,	4	Total	275

DIVISIONS.

North, 78 | South, 78 | West, 114 | Unknown, 5
Total, 275

Surgical Instruments. We have received a very complete illustrated catalogue of surgical instruments of Geo. Tiemann & Co.'s manufacture, issued by their agents, Messrs. Bliss & Sharp, 144 Lake Street, who will furnish them to the profession on application.

Obituary Record.—Died, at Tunbridge Wells, on February 11, 1866, W. T. Brande, Esq., F.R.S., aged 81. Dr. B. early in life devoted himself to chemical studies, and was for some time assistant and afterwards the successor of Sir Humphrey Davy, as Professor of Chemistry to the Royal Institution of Great Britain. He was a voluminous writer.

Mortality for the Month of July.—Below will be found the mortality report for last month, as prepared by health-officer Bridges. It will be noticed that there is a great increase in the number of deaths not only over last month, but over the corresponding month last year; the number of deaths being much greater than in any month heretofore, either this year or during any previous year, except in that year when cholera made such ravages among our population. The great mortality last month was undoubtedly owing to the excessively hot weather, united to the carelessness of the people in matters of diet and to uncleanliness, a fruitful source, in itself, of many of the evils to which humanity is heir, in the summer season especially. The table below will show that the greater number of deaths have been from diseases more peculiarly belonging to summer. Of course, as the city has increased in the number of its population, even during the last twelve months, some allowance must be made for an extra large number of deaths, naturally resulting from that cause. The number of deaths for

July, 1865, was 425, and for the month just ended, 706, an increase of over 60 per cent. over the former month.

CAUSES OF DEATH.

Accidents,	14	Fever, not stated,	1
Abortion,	1	Gravel,	2
Cancer,	3	Hydrocephelas,	6
Childbed,	2	Inflammation of Brain,	15
Cholera-Morbus,	10	Inflammation of Bowels,	11
Cholera Infantum,	35	Inflammation of Lungs,	12
Congestion of Brain,	7	Intemperance,	3
Congestion of Lungs,	4	Killed,	3
Consumption,	28	Measles,	67
Convulsions,	59	Marasmus,	1
Croup,	15	Old Age,	13
Delirium Tremens,	2	Paralysis,	1
Decline,	3	Rheumatism,	2
Diarrhœa,	21	Small-Pox,	2
Diarrhœa, Chronic,	2	Stillborn,	12
Diphtheria,	6	Summer Complaint,	159
Disease of Heart,	10	Suicide,	2
Disease of Liver,	5	Sunstroke,	2
Disease of Throat,	1	Teething,	30
Dropsy,	3	Tumor,	7
Drowned,	5	Typhoid Pneumonia,	2
Dysentery,	29	Whooping-Cough,	15
Fever, Remittent,	1	Worms,	1
Fever, Childbed,	1	Unknown,	42
Fever, Scarlet,	14		
Fever, Typhus,	1	Total,	706
Fever, Typhoid,	18		

AGES OF THE DECEASED.—Under 5 years, 518; over 5 and under 10 years, 33; over 10 and under 20, 13; over 20 and under 30, 35; over 30 and under 40, 45; over 40 and under 50, 22; over 50 and under 60, 12; over 60 and under 70, 9; over 70 and under 80, 9; over 80 and under 90, 1; over 90 and 100, 1; unknown, 8. Total, 706.

NATIVITIES.

Chicago,	474	France,	1	Mexico,	1
Other States,	72	Holland,	3	Switzerland,	2
Canada,	3	Ireland,	44	Sweden,	6
Denmark,	2	Norway,	13	Unknown,	9
England,	6	Bohemia,	1		
Germany,	62	Scotland,	3	Total,	706

DIVISIONS.

North, 190 | South, 196 | West, 315 | Country, 5

Total, 706

DEODORIZING PROPERTIES OF GROUND COFFEE.—Dr. Barbier affirms that ground coffee possesses some remarkable properties as a disinfectant. In several cases where he had to make *post mortem* examinations of bodies under *very disagreeable* circumstances, he found that a handful of coffee strewn over the body and about the room quite overcame any bad odor.—*Lancet.*

THE

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Original Contributions.

ARTICLE XXXV.

EPIDEMIC CHOLERA.—A FEW REMARKS ON ITS PATHOLOGY AND TREATMENT.

By R. DEXTER, M.D., Chicago.

Owing to the double interest of an epidemic being upon us, and so many of its principles lying concealed in the mysteries of pathology, a few observations from almost any one may be acceptable.

As its great importance has engaged the best energies of many able and distinguished investigators of both continents, it might well seem presumptuous in me to hope to contribute anything worthy of the consideration of the profession, were it not that the constant progress of physiology and pathology is such as to open up new avenues for inquiry, and ever affording fresh facilities for pursuing them. This subject involves many facts which lie at the very foundation of these sciences, and many others which can only be deduced from analogy, while some remain, as yet, unexplained. The difficulties in its study do not seem to depend so much upon a want of observation, as upon its hidden primary cause and complicated actions. If we carefully trace the gradual digression from a truly physiological action through the entire changes of

its pathological course, in a typical case of cholera, we will find about the following order of events:—

1. Slight derangement of alimentary canal, muscular languor and tremulousness, restlessness, headache, and anorexia.

2. An enhanced condition of the preceding phenomena, with abdominal uneasiness, perhaps actual vomiting and purging, tongue coated, cramping in distal and peripheral parts, arrest of secretion of urine, with coldness of surface.

3. Active vomiting, purging of the characteristic rice-water dejections, respiration labored, excessive, and painful, cramping of both body and extremities, great coldness of surface, and pulse variable.

4. Dyspnœa very great, peripheral circulation nearly suspended, venous congestion, labored cardiac action, skin livid, cold, and bathed in perspiration, great precardial pain, and coolness of respired air.

5. Low irritative fever, with an irritated and *congested condition* of one or more vital organs.

Many prominent men claim that the specific action of the cholera poison is upon the capillary circulation, some say pulmonary, others, general. To this I must, in part, disagree. That the capillary system is affected, is unquestionably correct; but it seems to me that there is as much evidence to confirm an opinion that its primary action is upon the nervous, glandular, or cellular systems, or that it acts, through the blood, upon any other system, as upon capillaries alone. Now, my belief is, that as soon as any poison has entered the blood, it acts upon its composition and changes its constituent elements; that it changes the constituent elements of the cells and their contents; that this modifies *absorption* and *secretion*, and thus alters *assimilation* and *excretion*.

That all known hæmatic poisons have some individual peculiarities, but many properties in common; and that all poisons taken into the blood must be eliminated by some of the emunctories; and that they have a specific predilection to escape from one or more eliminating systems, and when these are dormant that a compensating action is established, by which the other

systems of emunctories eliminate what the disabled ones failed to expel. These principles are as well illustrated and as well settled, in regard to the elimination of poisons, as they are in the more ordinary every-day work of excretion.

I will here cite the action of antimony, and compare it with that of the cholera poison, assuming that they are both taken into the blood slowly, but gradually increased in amount, so that the antimony is received into the system about as cholera poison usually is, and their similarity in many respects will be very apparent. Their analogous effects are:—1. Prostration. 2. Irritation of the alimentary canal. 3. Impaired function of pneumogastric and other organic nerves. 4. Impoverishment of the blood. 5. Lowering of animal heat. 6. Excessive vomiting and purging, and, 7. Cold, clammy perspiration. Their differential actions are:—1. In cholera, there is a greater tendency to spasms, causing an early suspension of function, and thus preventing the elimination of its poison. 2. A stronger tendency to recession of capillary fluids to internal organs, and this want of fluid in the capillaries results in an endosmatic action from the surrounding tissues. 3. This overloading of larger veins forces the watery portion of the blood through into the bowels, and, hence, the *rice-water dejections.* That there is, in cholera, an early arrest of functional and capillary action, and, consequently, of elimination, is proved by the following conditions:—

1. An arrest of secretions, *e.g.*, urine and bile.
2. A gradual subsidence of animal heat.
3. An imperfect aëration of the blood.
4. Undue fulness of larger vessels.
5. Conditions of nutrition and disintegration in those who recover from its first stages.
6. Excessive nervous irritation.

Judging from the above facts, it seems to me that the indications for treatment are as patent as are the principles of medicine. They are to restore the action of the emunctories by recalling the receding capillary circulation. If this is accomplished, nature herself will be adequate to the task of elimina-

tion and restoration. The truth of the foregoing statements has been abundantly verified in our own practice. The above indications may be fulfilled by:—

1. Allaying nervous irritation.
2. By artificially restoring animal heat.
3. By a proper administration of the true eliminating medicines.

Nervous irritation is probably best allayed by opium in regular and sustained stimulant doses, until capillary action is provoked. Perhaps the preferable preparations are the tinct. and camph. tinct. opium, with such modifications as the case requires; if the discharges are excessive, with injections of plumbi acet. and morph. acet. The best artificial method of restoring animal heat, is to completely envelope the patient (excepting his face) in wet blankets, as hot as can be tolerated, and these hot envelopes are to be changed as often as their temperature is appreciably diminished. We should, also, (if the case proves in any way obstinate,) strictly enjoin recumbent rest, with sinapisms to the epigastrium and præcordia, and administer ice and ice-cold water, to be swallowed every few minutes.

As soon as the excessive cramping, vomiting, and purging has subsided, administer the true eliminatives, those that will not only call into action the stomach and bowels, but the skin, lungs, kidneys, liver, absorbents, in fact, every conceivable method of judicious elimination.

My selection is usually a mercurial one, because it, *per se*, has the very effect we should produce—cathartic, catalytic, and eliminative. Camphor and ammonia, I find very useful. They materially aid pulmonary, cutaneous, and urinary elimination, and tone up the depressed pneumogastric and other organic nerves. In my practice, heat and moisture have overcome the congestion of the kidneys and liver better than anything else. I apply hot wet cloths to the lumbar and hypochondriac regions.

The above is a concise statement of my plan of treatment, with the principles upon which it is based, and the objects intended to be accomplished. I will here give notes of cases

subject to this plan of treatment in my practice, with a success truly flattering, and one that the profession can repeat:—Of 78 cases, 63 were treated upon this method at the commencement of the cramping and rice-water dejections, and all recovered. Of the remaining 15, who were not seen until much later in the disease, (bordering upon collapse,) only 6 died.

For a further consideration of the elimination of hæmatic poison, the reader is referred to Dr. HEADLAND'S work on the Action of Medicine, chapter on eliminations; and Dr. WILLIAMS' Principles of Medicine, section on toxemia. The plan, so highly recommended by some authors, of allowing the emetic and cathartic action to continue, or even increasing it, whilst it has some show for elimination, seems to me to hasten collapse and cut off the chances for general emunctorial excretion; and we thus seem to get a pell-mell elimination instead of an elective one. Chloroform, I think, is contra-indicated by a highly carbonized condition of the blood, by an already embarrassed condition of the organic nerves, and by an oppressed condition of the heart and lungs. [See GROSS' System of Surgery, third edition, pages 539 and 540.]

In a state of collapse, when the watery portion of the blood has been drained away by the excessive evacuations, and where prostration marks every organ of the body, it is my opinion that little can be done, except by supplying such nourishment as requires but little digestion, and that will serve to sustain vital and recuperative action—beef-essence, fresh milk, coffee or tea, as the patient is accustomed, chicken broth, etc. Perhaps I ought here to mention some of my reasons for considering the rice-water dejections the result of pressure. They are: 1. The abdominal veins are congested, and with such congestion we always have an aqueous exudation. 2. Anatomically, this is the most free exudating surface. 3. Hydrogogue cathartics are probably exuded into the lower portion of the intestines, as a result of congestion. 4. Nervous shocks, as fear, cold, and the like, produce such action, especially when the kidneys are inactive, as is the case in cholera.

ARTICLE XXXVI.

OBSERVATIONS ON SCURVY, AND ITS CAUSES AMONG THE U.S. COLORED TROOPS OF THE 25TH ARMY CORPS, DURING THE SPRING AND SUMMER OF 1865.

By S. HEMENWAY, M.D., late Surgeon 41st U.S. Colored Troops.

During the siege of Richmond, Va., and afterwards in the winter of 1864-5, and the following spring, I had occasion to observe the cause, or rather a combination of causes, to which may be attributed the general appearance of scurvy throughout the 25th Army Corps, upon the arrival of this command in Texas, in June, 1865.

The expedition left City Point, Va., about the 1st of that month. I was informed by Dr. NORTON FOLSOM, Medical Inspector, when he was on an inspecting tour through the Western District of Texas, during the month of September, 1865, that about 60 per cent of the whole strength of the corps had been afflicted with scurvy during the summer. The mortality percentage I do not remember to have heard him say; but a report of sick, during the month of August, 1865, at Edinburg, Texas, shows the number 89, from a command of 1000 men, as having been treated in *hospital;* and from my own personal observations in the hospital during that month, all, or nearly all, had scurvy or some other disease complicated with it. The number of deaths reported was 10, and nearly all the result of a scorbutic condition of the system. So it will be seen, the percentage of mortality, with reference to this part of the command,) which I think can be taken for far better than the average,) was 11 per cent of the whole number of patients treated in hospital. Large numbers were sick from scurvy in *quarters*, and, of course, cannot come under the calculation of those treated in *hospital.* Suffice it to say, that often more than one-half, and sometimes three-fourths, of a regiment were afflicted with scurvy, and were cared for as well as circumstances would

permit in *quarters*, in consequence of insufficient hospital accommodations for such large numbers.

This evil had to be remedied, and there were, at the time the colored troops landed in Texas, (in the month of June, 1865,) scarcely any medical supplies, and the quality of the rations for the men *very poor*. As fast as the men were landed at Brazos Santiago, there were, from each U.S. transport, from 50 to 100 of the *worst* cases of scurvy sent to the post-hospital, which was in my charge, and then the only hospital for the whole army of the Rio Grande, having the capacity of 80 beds only. Within one week, there were no less than 500 patients, (chiefly scorbutic,) a few within, and many lying around the hospital buildings, without shelter, in the open air, upon the sand, and supplied with a limited quantity of condensed water, with now and then a supply of fresh *muddy* water from the Rio Grande.

Some 200 or 300 of these patients were immediately sent back to hospitals at New Orleans, but the number of sick again rapidly accumulated upon the arrival of each succeeding transport, and in less than three days the number of patients far exceeded the former. By this time, we had hospital tent-flies up, sufficient to protect several hundred patients in an overcrowded manner. This condition of affairs could not be tolerated for any length of time, and a request was made to have more sick sent away, in order to have room for the number that could be actually accommodated with sufficient space for beds under shelter. I feel justifiable in pronouncing all of these cases scurvy, as I failed to discover, with but very few exceptions, any other disease which was not more or less complicated with a scorbutic condition of the system.

So far as I noticed, the chief characteristic symptoms were a weakened and debilitated state of the system, with emaciation, particularly in those cases accompanied by excessive discharges from the bowels, oftentimes of a dysenteric nature, and sometimes merely a diarrhœa; the gums were very much swollen and projecting over the intervals between the teeth, very similar in size and shape to the ends of one's fingers, and of a dark red or purplish hue, and frequently of a com-

pletely black color. These projecting or impending columns of swollen gums very closely approximated each other, and sometimes coalesced, entirely hiding the lateral view of the molar, bicuspid, and canine teeth. Extensive ulcerations of the gums was a universal concomitant, and attended with frequent bleedings. Over various parts of the surface of the body and extremities, there could be detected extensive and diffused ecchymosis, also a dropsical condition of the feet and legs, usually attended with severe pain, sometimes in the joints, simulating rheumatism, and frequently along the continuity of the shafts of the bones of the lower extremities. Vesications were frequently noticeable, from which oozed serum and blood, oftentimes becoming foul ulcers. The muscles of the calf and thigh of the extremities were frequently found to be indurated, and the joints, particularly the knee and ankle, anchylosed.

These patients were universally dejected in spirits, and death ensued after much muscular exertion, or (the patient's appetite being capricious) from hemorrhage, which, in all probability, was induced by excessive and sudden congestion that would inevitably take place during the process of digestion, which must necessarily be more active than is usual during any period of the disease, in consequence of the quantity and quality of the ingesta which the patient happened to be allowed to take. One case, in particular, of the latter kind, I was informed of, as having occurred in one of the wards of the post-hospital at Brazos Santiago. Deaths among scorbutic patients sometimes occurred from pulmonary œdema of passive origin, dependent on the morbid state of the blood.

The *cause* of the appearance of scorbutus among these troops cannot, I think, be attributed *alone* to the short voyage, during the month of June, 1865, from Fortress Monroe, Va., to Brazos Santiago, Texas. There were a few well-marked cases noticed while the troops were encamped near City Point, Va., in May last, before embarking on this expedition. The voyage, however, may have been, and doubtless was, the chief exciting or secondary cause in the development of scorbutus, dependent on the previous existing causes and the general physical condi-

tion of the troops at the time of embarkation. The spaces between decks, into which they were crowded, were commonly dark and illy ventilated, thus constituting the chief exciting or immediate cause.

In one of my weekly reports, in the month of May, when we were encamped near City Point, Va., I reported one case of scorbutus, and stated in the remarks, that I was fearful more cases would shortly be developed. It too frequently happened that in every issue or two of rations, a portion would be found damaged, for example, wormy hard-bread and a damaged condition of beans, rice, and pork. The supply of fresh vegetables was very meagre. The *dessicated* vegetables, these soldiers, as a general thing, disliked very much, and most of them would not partake of the preparation cooked in any manner. Such was the character of the food upon which they subsisted during the previous winter, with the exception of a very bad quality, generally speaking, of fresh beef, issued perhaps once or twice a-week—bad quality, I say, because the beef cattle were not usually in the very best order for beef. It is a well-known fact, how neglected has been the care of beef cattle during their transportation by railroads and steamboats, in not giving them a proper supply of water, or depriving them entirely of it during the whole trip. Of course, the result was a state of exhaustion, and a febrile condition among the cattle was induced, and in this state they were driven off to slaughter-pens, there to be butchered and distributed to the soldiers. Other causes, which may be secondary to this defective mode of subsistence, may be added, such as excessive and long-continued fatigue duty, together with almost constant exposure to damp and cold during the long, wet, winter season. The huts which were built for winter-quarters, were generally very dark, damp, and cold, and the supply of fuel insufficient. Many of these soldiers became despondent, and would not put forth the least effort to make themselves comfortable, but would sit or lie down upon the cold, damp ground, within their huts, without a spark of fire, and most always with their clothes pretty well saturated with water. The water used for drinking purposes was very impure,

it being always taken from filthy sloughs, surface-water wells, or some surface-water stream, the washings of old, filthy camp-grounds, etc., etc. Hence, it will be seen, from the statement of these facts, that the cause of the prevalence of scurvy among these troops is very much complicated.

It was remarked by some medical men, after the general appearance of scurvy among the troops in Texas last summer, that they believed that many cases reported as rheumatism, during the winter in front of Richmond, Va., were, in reality, scurvy, of which I have not the least doubt.

When our command landed in Texas, in the month of June, 1865, our means for treatment were very limited for many weeks. The rations issued continued to be of the very worst character, and the water (condensed sea water) poor in quality and small in quantity. As soon, however, as the troops made their way into the interior, they began to improve; and as soon as fresh vegetables were supplied, even in as limited quantities as they were, scurvy began to rapidly decline.

Medicinal agents were tried to some extent. From the use of muriated tincture of iron alone, I have witnessed a gradual improvement in the condition of patients; also from some of the salts of potash—the iodide of potassium in conjunction with chlorate of potash; also topical applications, in the form of lotions, directed to be used for the ulcerated condition of the gums; sulphate of zinc and alumina, but never so rapidly effected as from the juices of fresh vegetables, administered internally.

After the general appearance of scurvy, during the month of June, 1865, it continued to increase rapidly through the following month, after which it began to decline, at first, slowly, and, I think, by the middle of last November, the disease had almost entirely disappeared. This decline of the disease was in consequence of supplies of fresh vegetables furnished, notwithstanding the limited quantities in which they were issued.

A great deal of credit is due to the use of the juice of the plant "*Agave Americana*," indigenous in Mexico, on the border of which country our troops were stationed. A description

of the plant is given in the Appendix of the U.S. Dispensatory. I have employed it with some degree of satisfaction, but I cannot say that the good results depended *entirely* upon this remedy, as the scorbutic patients were supplied at times with a few fresh vegetables, such as raw potatoes and onions sliced in vinegar, and pickled cabbage, and thus supplied, the improvement was always, I noticed, much more marked.

ARTICLE XXXVII.

TAPE-WORM.—(*Tænia Solium.*)

By J. V. HERRIOTT, M.D., Valparaiso, Ind.

The following case of tape-worm tends to strengthen the reputed efficacy of pumpkin seeds (*cucurbita pepo*) in expelling tape-worm from the human intestines:—Geo. G., *æt.* 24, presented himself at my office, June 7th, 1866, complaining of having been "sick for two years," and wished to know, "what is the matter with me?" He had dyspeptic symptoms, with colic pains, especially after eating; had a gnawing, craving sensation for food, the attempt to gratify which, produced satiety and sickness; said he had been passing "worms" for the last two years; had nervous tremors, and was weak; could not endure work from one meal to another, on account of weakness; said he was getting worse all the time, and now could "work but little." Upon his describing the "worms" passed, I diagnosed tape-worm, and requested him to bring me a specimen, which he did, an examination of which confirmed me in the diagnosis I had made.

I directed him to take two ounces of the kernels of pumpkin seeds and make them into an emulsion with sugar and water, and the next morning, fasting, to take all the emulsion at once, and in two hours to take two tablespoonfuls of castor-oil, with one teaspoonful of spirits of turpentine, and to repeat the dose in two hours more, if the first did not operate. The first dose

started the worm from his moorings, and three feet were discharged; but he, being anxious to complete the "job," repeated the dose, and in a short time sixteen feet were discharged, which he brought to me at midday, preserved as directed. On careful examination, the head was not found on either end of the worm; I, therefore, directed him to repeat the treatment, which he did, but without further development of worm.

This man said he had passed at least six inches of "worms" every day for the last two years; sometimes dropping down into his boots while at work. The passing of segments of the worm was, no doubt, the means of keeping him up as long as it did, for, if one-half of the length he says he passed had been retained in the intestines, grave symptoms would have been manifested much earlier.

There is one fact more in this case, which has a bearing on the etiology of tape-worm. Having observed that Dr. CABBOLD expressed an opinion before the British Association, "that tape-worm is often contracted from eating beef and veal," I questioned my patient on this point, and elicited the fact that in the fall of the year before he began to pass the segments, (which was in the spring,) he was in the habit of eating raw beef, for which he says he has a strong relish. We further remark, only, that since the expulsion of the worm, this man appears to have new life and energy infused into him. He feels well, eats well, sleeps well, and works well.

THE BANEFUL EFFECTS OF NICOTINE PREVENTED.—M. Melsens has found that tobaccos, from various countries, contain nicotine in very different proportion. In tobacco from some parts of France (*e. g.*, the department of the Lot) there is 7.96 per cent. of nicotine; whilst Havana tobacco contains only two per cent. He proposes to smokers a way of preserving them from the effects of the alkaloid, and advises them to put into the tube of the pipe or cigar-holder a little ball of cotton, impregnated with citric and tannic acids. As the smoke passes through the cotton, it will deposit the nicotine therein, in the shape of tannate and citrate. M. Melsens has made very ingenious experiments which go a very great way to prove that he is perfectly correct.—*Lancet.*

ARTICLE XXXVIII.

REPORT ON CEREBRO-SPINAL MENINGITIS.

By J. S. JEWELL, M.D., Prof. Anatomy, Chicago Medical College; Member of Illinois State Medical Society; etc., etc.

Read to the Illinois State Medical Society, June, 1866.

ACKNOWLEDGMENT.

To Drs. J. M. WOODWORTH and E. O. F. ROLER, who have kindly exerted themselves, while engaged in foreign study and travel, to procure for me European monographs on the subject of this report; to my colleagnes, Profs. JOHNSON and BYFORD; and to my friends, Dr. E. MARGUERAT and Mr. EPPLER, of this city, my especial thanks are due, for valuable assistance rendered. The latter gentlemen translating for me a number of German monographs.

Within the past few years, a disease has made its appearance in various parts of the United States, pursuing, as a general thing, a rapid course, not very amenable to treatment, and attended by a fearful mortality; and in which the cause, whatsoever it may be, has seemed to expend its influence, mainly, on the contents of the cerebro-spinal cavity.

The disease was comparatively new to most of the practitioners of this country, and from this cause, and its widespread or epidemic prevalence and unusual mortality, it excited, very naturally, much attention among physicians, and alarm among the people. That the disease has frequently occurred both in Europe and other parts of the East, and in our own country in times past, will appear from a brief view of its history.

In giving an historical sketch of a disease about which so many opinions have been and even now are held, it will be necessary to keep in view, not only the chronological order of such occurrences of the disease as shall be given, but a more or less critical examination should be made of the reputed occurrences of the disease for reasons which will appear hereafter, and in which the attempt shall be made to eliminate all doubtful examples of its occurrence, that in this way an evident source of fallacy may be avoided. For the disease under con-

sideration has often been confounded with other forms of disease distinct from it, and *vice versa*. But while an eye will be had to this matter, no formal attempt at a critical history of the disease will be made in this report.

In the historical sketch which follows, I shall first trace it in the Eastern Hemisphere, and, subsequently, in the United States. I will make no pretensions, here, to give all the occurrences of the disease that have been recorded, or that I have in my possession, but examples will be given from each well-marked epidemic. The sketch which follows, has been collected from a great variety of sources, both in this country and Europe, none, so far as I am aware, giving a consecutive history of the disease:—

HISTORY IN THE EASTERN HEMISPHERE.

From the best information I have obtained, it appears "cerebro-spinal meningitis" has prevailed epidemically in Europe and adjacent parts, chiefly in the south part of Europe, as follows:* In 1310, in France, which has seemed to be its favorite district in the Eastern Hemisphere. Then, in Europe again in 1503, 1510, 1516, 1517, and in 1528 once more, and was *this* time the precursor of the plague. In 1553, it appeared in Silesia, and carried off large numbers of the people. In 1556, it was observed in England and France; in Spain, in 1557, where it proved fearfully fatal; and in 1559, at Palermo, in Sicily. It occurred in many places in 1564. From 1569 to 1574, it prevailed in many parts of Europe, and was again followed by the plague. According to OZANAM, it appeared in 1580 at Rome, associated with a catarrhal affection, and swept away not less than 12,000 persons; and in like manner, 12,000 at Venice; and 2000 at Madrid, in Spain. In Europe again, in 1582. It was observed at Trent in 1591, and in 1592 at Florence. In various parts of Europe, in 1616 and 1624. It is reported by SYDENHAM, in 1661, as partaking of the charac-

* I have not been able, as yet, to obtain the report of Dr. BURDON SANDERSON, made to the British Parliament, on the disease as it appeared on the Lower Vistula; nor the elaborate monograph of MANKOPFF'S, which has been, or is to be, published at Vienna, in Austria, but *will* soon as possible.

ter of typhus. In Italy, in 1691 and 1693, and in England, in 1698. In Prussia, in 1704, and again in England, in 1710 and 1741. In Piedmont, in 1720, in Egypt, in 1760, and again in Europe, in 1761. According to MARTEAU DE GRANDVILLIERS, at D'Aumale, in 1757 and in 1778, coincident with an epidemic of typhus at Lyle; and again, in 1778, in other parts of Europe. In 1805, it appeared at Geneva; then at Melazzo, in Sicily, in 1808, where, according to one BOYLE, the most common characteristic seems to have been plastic effusion within the cerebro-spinal cavity. In 1814, it appeared at Grenoble, and was reported on by Mons. BILLERY, and after this occurred at Vesaul, in 1832.

In 1837, it appeared at the military hospital at Bayonne, where 33 persons soon fell victims to the disease. From this date, the disease spread northward through France, in two directions, and, during the time of its progress, no less than 57 epidemics are reported, many of them attended by an alarming fatality. Of the two paths of progress of the French epidemics, one extended along the eastern, and the other along the western border, penetrating but once into the interior of the country.

The western path began at Bayonne, as already related, and extended over Bordeaux to the Loire, visiting La Rochelle and the province of Landes, Dax, etc. It extended up the Loire, on either hand, into the interior, of which this was the only example. It then appeared at Brest, Cherbourg, Caen, and other places on or near the coast, in 1840 and 1841, and from these places it extended onward to Versailles, about Lothringen, Elass, and Languedoc. Between 1839 and 1842, it appeared at Metz, Strasbourg, Nancy, Colmar, and, still farther, at Laval, Chateau Gonthier, Tours, Blois, Joigny, and in the neighborhood of Rambouillet.

Following the other branch, which began at Narbonne and Foix, and dates at 1837:—In 1838, it appeared at Toulon, and early in 1839, at Nismes, and in the winter of this and the following year at Avignon. Here, it was mainly confined to the military, as in some other parts of France, though it appeared

many times among the civil population. It was then seen at Mont Brison, in 1840 and 1841. The winter following, at Aigues Morte, and, occasionally, elsewhere, until 1849.

In Italy, the disease appeared in 1837, at Terra Di Savolo. It then extended to Calabria Ulteriore, and Principato Ulteriore, and also was observed at Naples, in which latter place it again appeared in 1846, and in various parts of Sicily. Since then, the disease has, until lately, not prevailed in Italy. In the winter of 1865, it reäppeared at Nizza and vicinity.

It was observed in Algiers from 1839 to 1847, especially the eastern part, and from here it extended toward the great Sahara desert.

Besides the places already mentioned, it appeared at Gibraltar in 1844, mainly confined to the native population.

From 1845 to 1848, it prevailed with great malignancy in Denmark. In 1846 and 1847, it was observed in Ireland, especially in the vicinity of Belfast, as reported by Dr. R. MAYNE, and also at Edinburgh, in Scotland. From 1854 to 1861, it prevailed in a large number of places in Sweden, also at a few places in Norway, and, about the same time, among the troops from Holland, at Anheim. The disease was observed by REINACHER, at Wrisburg, in 1851. In 1863-4-5, it appeared in many parts of Germany, but especially the Dantzig district of West Prussia, as related by HIRSH, RUMMEL, and others, where, perhaps, 2000 cases occurred; and, also, less extensively, in other parts of West Prussia, as at Berlin, Bromberg, Stettin, etc.; and farther east, in the Grand Duchy of Baden, at Carlsruhe, and Rastatt, as related by NIEMEYER, of Tubigen.

HISTORY IN THE UNITED STATES.

Let us now turn to its history within the limits of the United States. Though I have somewhere seen a statement of its earlier occurrence, yet the earliest recorded occurrence of the disease in this country which I now have at hand, is that at Medfield, in Mass., in 1806, and, again, in Litchfield County, Conn., in April, 1807. From this time, during the years of 1807-8-9-10, it was observed, winter and spring, at many places in the New England States and New York, and by 1810-11 the

disease had begun to prevail extensively and with great severity, in New England, New York, and Canada. In New England it reached, perhaps, its highest degree of prevalence during the year last mentioned. From this period the disease began to decline, and, finally, in the course of a few years disappeared as an epidemic. This epidemic was reported on by many observers, among whom were GALLUP, NORTH, WARREN, WELCH, STUART, THACHER, HOSACK, MINER, and TULLY, etc. It was coincident with a marked typhus constitution, and cases were frequently complicated with pneumonia and pleuro-pneumonia.

Between 1840 and 1850, it prevailed epidemically in many parts of the Southern, Middle, and Western States, as in Alabama, Tennessee, Kentucky, Missouri, Illinois, Indiana, and Michigan. Since that time, the disease has not appeared epidemically, so far as I can learn, or, at least, notably so, until since the beginning of the late war. From the winter and spring of 1862-3, the disease has prevailed in a large number of localities, both North and South, and many times, but especially in the Southern States, attended by a fearful mortality. Happily, at this time, the malady has subsided as an epidemic, though sporadic cases are not unfrequently met with.

Accounts by various observers have been given of the late epidemics in this country and Europe, but few of them, however, for various reasons, satisfactory as desirable; and to these reports, and to such accounts of earlier epidemics as I have been able to possess myself of, or the *facts* they give us, let us now turn our attention.

MANNER OF TREATING THE SUBJECT.

Before I go farther, it may be well for me to say something about the method I have adopted in treating this subject. I have obtained many of the most important reports, both in Europe and this country, and where I have been unable to consult a report directly, I have frequently done so through friends who had access to them. The matter I have thus become possessed of has been analyzed, and all facts of the same kind or order arranged under appropriate heads. Four tabular statements of facts were made in this way; the first, exhibiting the

symptomatical; the second, the *post mortem;* the third, the etiological and pathological; the fourth, the therapeutical histories of the disease. From these analyzed statements, the body of the report has been drawn. Following this, is a discussion of the facts, in which the attempt is made to evolve their teachings. In each statement, room was left for incidental facts and exceptional cases.

In the examination I have made into the literature of this subject, I have remarked such a contrariety of opinion, as to its nature, etc., in cases where an opinion has been offered at all, and such a difference in the appearance of the disease in some particulars, as it is described by various observers, as to impress me with the belief it was necessary to make a broader survey of the disease, as it has appeared at various times and places, and, in this way, to collect a greater number and variety of facts than has been customary with those who have considered this subject; that in this way an evident source of fallacy may be avoided, and a broader foundation laid for sound deductions.

In an inductive science like medicine, *facts* lie at the foundation of true advancement, and in proportion as they are numerous, in the same degree are we likely, all else equal, to reach truthful conclusions. For the purpose of obtaining such a body of facts as might lead to sound conclusions, I have taken some pains to collect them; and in going to all available sources, I have done so, actuated only by a feeling of the above-mentioned necessity.

And surely, a disease which has occurred so often, and concerning which there is such a body of material within reach of the profession, but of which the profession, as a body, knows so little, and which has been so imperfectly understood, has proved so intractable to treatment, and which involves so many interesting questions in pathology. I say, surely such a disease demands a careful study. For these and other reasons, I have felt compelled to extend this report beyond what I had originally intended as it limits.

I. SYMPTOMATICAL HISTORY.

1. Premo itory Symptoms.—It is pretty well agreed among observers that there are no well-marked premonitory symptoms which may be regarded as characteristic of the disease. Many times, from a state of apparently perfect health, the patient is seized with the disease, and without warning. *E.G.*, M. TOURDES saw premonitory symptoms in 44 cases out of 73. HIRSH relates, that out of 40 cases, 24 had similar premonitory symptoms, 16, however, had none, and some were, as stated above, attacked *ab initio*, with the fully developed disease, even while at their ordinary avocations.

But, generally, the attack is sudden. The most constant of the *early* symptoms is that of *chilliness*, which sometimes amounts to mere rigors, but more often to a severe chill. NIEMEYER has seen cases occur without a perceptible chill, but such cases must be very rare.

Another symptom, almost constantly present, is *pain in the head*, extending frequently down the back of the neck, or even down the full length of the spinal column. HIRSH noticed pain in the abdominal walls, as one among the earliest symptoms. Drs. SKIVEN, GREENE, and others, have noticed pain in the knee, or some part of the extremities, before pain in the head; but in almost every case it has soon appeared in the head, and from thence has frequently extended to the back and extremities, especially the lower. There is sometimes, quite early, soreness in the back of the neck and elsewhere.

Nausea and *vomiting* have also been observed as among the earliest symptoms, as well as most common. The bowels have generally been *normal* or *constipated.* Some *few* observers, however, have reported severe purging, like in cholera or cholera-morbus. But my enquiries show any form of looseness of the bowels to be rare.

Sometimes there is a sense of stiffness and soreness about the throat, as recorded by GALLUP, and stiffness of the muscles of the face and neck, and sometimes slight paralysis of the tongue was observed by Dr. UPHAM.

Delirium, although not so early as the symptoms already

referred to, is, yet, very soon, one of the most constant and characteristic symptoms of the disease, and, in a few cases, is soon followed by coma, or even may be preceded by *coma*. Dr. ARMSTRONG, of Mobile, saw the delirium commence with extreme suddenness and violence.

The *pulse* is, *generally speaking*, diminished in force and volume, and increased in frequency. The *surface* is usually paler than natural. The condition of the *pupils* not changed or variable. Such are the most prominent of the early symptoms. Others have been reported, but they are not sufficiently constant to deserve attention.

All the premonitory symptoms indicate a most serious involvement of the nervous system, especially the cerebro-spinal, and point, unmistakably, to those parts as the seat of the disease in which, as we shall see, *post mortem* examinations reveal the greatest changes.

2. Surface.—In the beginning of almost every case, the *temperature* of the surface is lower than natural, and in some virulent cases remains so till death. After reaction occurs, the heat of the body generally does not rise much above what is natural, though, in a few cases, it becomes excessive. In the cases observed by HIRSH, the temperature was not, on an average, perceptibly increased above natural, as indicated by the thermometer in the axilla.

The *moisture* of the skin has been variable. Sometimes it is dry as well as cool, as observed by ALLEN and others. 25 per cent of the cases observed by the gentleman last named, are said to have presented a moist skin. According to RUMMEL, after the disease had progressed a few days, occasionally profuse perspiration occurred at irregular intervals, sometimes only partial, as on the head and face, at other times over the whole body.

The *color* of the skin has been variable, perhaps, most frequently nothing remarkable. In the beginning of the disease, it is generally paler than natural; especially is this true of the face. The surface has sometimes been observed of a cyanotic hue, as by HIRSH and OSTER. Sometimes the face is flushed

after reaction, as in the cases reported by UPHAM and others; rarely so from the beginning. It is owing to the fact that *maculæ* or *spots* of various kinds appear on the skin occasionally in this disease, that it has its name "spotted fever." Spots of various kinds have been observed in this disease, chiefly as follows:—

Petechia have been most frequently observed. They vary much as to time of appearance, extent, color, and duration. They seldom appear at the commencement of the disease—frequently about the second or third day or later—while, in the majority of cases, they never occur with any distinctness at all. They seldom are copious, and generally are confined to the neck, breast, and arms, appearing frequently on other parts of the body. As to color, they vary from red to a purple or dark color, and may appear at almost any period, and disappear at any time after their occurrence. They have sometimes been observed to persist until after death. They vary in size from a pin's head to half-an-inch or more in diameter. They are generally distinct, though they may be confluent. They are seldom elevated, and do not usually disappear on pressure. Most observers agree they are not pathognomic, and that their appearance or disappearance has no marked import, either in diagnosis or prognosis. Some observers who have met the disease have not seen them at all. NIEMEYER observed them occasionally in the epidemics at Carlsruhe and Rastatt. RUMMEL and HIRSH saw them very seldom in the Dantzig epidemic. They were observed by FORGET at Val de Grace but seldom. BROUSSAIS and LEVY mention them in a few cases. They were seen more frequently by BOUDIN, MATTOT, TOURDES, and LEFEVRE, and among the older writers, they are mentioned by PRINGLE, HILDENBRAND, and others.

In the epidemic which prevailed in the New England States, between the years of 1808 and 1812, they were observed by Dr. GALLUP, about one time in six, distinctly. They are mentioned as frequently seen by Dr. NORTH, and those to whom he refers, in his work on "Spotted Fever." In our own late epidemic, they were more frequently seen than in the contempo-

raneous epidemics in Europe. They are mentioned by numerous observers, as GREENE, GERHARD, DRAPER, UPHAM, LEVICK, ALLEN, and others, who have recently communicated their observations to the medical journals of the country.

As regards the character of the spots, they seem, generally speaking, to be extravasations beneath the skin, and are seldom elevated to the same degree they often are in typhus. They seem *sometimes* to be simply congested spots, which more or less disappear on pressure—the former do not disappear thus.

Herpes Labialis.—After the spots referred to in the last paragraph, herpes has been most common. Most observers in Europe speak of it. It has been noticed by FORGET in a large number of the cases which came under his observation. The same happened in NIEMEYER'S cases. HIRSH and RUMMEL saw herpes frequently in the Dantzig epidemic; also M. LEVY, at Val de Grace. The eruption has generally appeared about the mouth, and on various parts of the face, extending from thence to the ears, neck, etc., rarely farther. It appears at irregular times, and seldom in the rapidly fatal cases. It generally occurs in those cases which have several days' duration and are distinctly febrile in character.

Occasionally other eruptions, as roseola, occur. OSTER and HIRSH have seen this. The latter has seen a rash like that of scarlatina, or like measles, in a very few cases. While LEVY and others have seen erysipelas coincident with the disease.

Such are the most important facts relating to the surface of the body which have been observed. It is to be remarked that none of these appearances are pathognomic, since, in the majority of cases they do not appear at all, or, at least, distinctly, and since many diseases, in many respects different from this one, present the same phenomena.

3. Vascular System.—The character of the pulse, generally speaking, from the beginning to the end, as noted by a large majority of observers, has been:—1. That of diminished force. 2. That of increased frequency, and, 3. Less frequently irregularities. By NIEMEYER, the pulse was found to correspond to the temperature. The pulse in cases where the temperature

was low, was observed, in a few cases, as low as 60 in a minute. The pulse was noticed by HIRSH, RUMMEL, and NIEMEYER as generally slow at the beginning of the disease, but more frequent as it progressed, especially in fatal cases.* Such was the experience of GALLUP and others in our own country, and of the French observers. This feebleness seems to be shared by the entire circulatory system, heart and bloodvessels alike. But exceptions occur. In one case, which proved fatal three hours from the date of attack, the pulse was normal in frequency, and was full, and so continued until after respiration ceased. This occurred in my own practice. Such cases, however, are very rare. *Hemorrhages* have seldom occurred. *Epistaxis* has, perhaps, been most frequently observed. LEVY, *e.g.*, says that out of 43 cases, 9 had epistaxis. Hemorrhagic spots also occur beneath the skin and mucous membranes, and sometimes beneath the serous membranes and into the texture of various organs, as will be shown more fully in the *post mortem* history of the disease.

4. Blood During Life.—It is a matter for regret, that the blood has not more frequently been examined. But in all the cases which have fallen under my notice, the fibrine has uniformly been increased in quantity, or above the normal standard, and the same remark has been true of the corpuscles. The color of the blood has almost uniformly been bright. In 4 cases, in which the blood was examined by ANDRAL and GAVARRET, the fibrine was found increased from 3.70 to 5.63, the normal standard being about 2.20; and the corpuscles from 134 to 143 parts in 1000, the normal standard being about 131. Dr. AMES, of Alabama, examined the blood in 4 cases, and found the fibrine from 3.46 to 6.40 in 1000. Mons. MAILLOT reports 6 cases, where the blood was examined by SOULIER,

* I shall make more frequent reference to some foreign monographs, than to the brief papers published in our own country, *only* because some of the former embody such exceeding careful, extended, and valuable observations. I am deeply indebted to the excellent monographs of RUMMEL, HIRSH, NIEMEYER, and KÖHLER. The latter is one of the most elaborate treatises ever published on all forms of cerebro-spinal inflammation. Their titles, with others, will be found elsewhere.

where the fibrine rose to 6 parts in 1000. I have, myself, had the opportunity to observe the same fact. In one case, blood was drawn the third day of the disease, it was the first bleeding. It coagulated rapidly, and with a clot which, for size, firmness, and thickness of the buffy coat, surpassed anything I have ever seen. The objection which has been made to such examples, that the blood was probably examined after the second or third bleedings, when we would be led to expect an increase of fibrine if it were true, as it is not, will, certainly, not apply to the corpuscles, since we should, for the same reason, look for a diminution of the corpuscles. But we have seen they are increased. Observations, tending to establish the same facts, have been made by M. FORGET, FAURE VILLAURE, and others. The buffy coat has been noted as often very considerable by numerous observers. Dr. AMES abstracted blood in 37 cases, and in all the color was unusually bright and the coagulation rapid. In 4 cases out of 37, he witnessed the buffy coat.

5. *Digestive System.*—The *tongue* is frequently normal, as mentioned by BROUSSAIS, *e.g.* Usually it has a whitish coat, sometimes creamy, and is moist. There are, however, numerous exceptions to this statement. After the disease has progressed for a time, and, rarely from the beginning, the tongue is yellowish or brownish, and, *sometimes*, dry. But in the latter stages of most cases, especially fatal cases, the tongue becomes brown, or even dark, and fissured and dry, and not unfrequently, in such cases, red, and, in a few examples, sordes collect on the teeth, lips, and tongue. BROUSSAIS reports the tongue brown or dark from the beginning, rarely. ALLEN has seen the tongue swollen, and presenting indentation along the margin.

The *stomach*. The most constant symptom referable to the stomach, is *nausea* or *vomiting*. Indeed, so early and so constant is this symptom, that it is one of the most characteristic of the disease. It is increased by assuming the upright posture. It is almost exclusively sympathetic, and is usually referable not directly to the stomach, but to cerebral disorder, and is generally accompanied by fever and headache. It almost inva-

riably occurs within the first two days of the disease. It generally passes away after a day or two, but may continue for several days, or recur at intervals. In a few cases, it has not been observed at all. There is, usually, nothing peculiar about the matters vomited, though bile has often been observed, as by Dr. ARMSTRONG, of Mobile. The appetite is variable, though generally impaired or lost. The bowels have generally been observed as constipated or normal. Diarrhœa seldom occurs, but has been observed, rarely, as severe.

6. Respiratory System.—But few symptoms occur here worthy of note. Most observers state, on the average the respirations are slower than natural in this disease, though there are marked exceptions. As the disease advances, especially in fatal cases, the respirations become more slow and laborious till death. They are also frequently irregular. At the commencement of the disease, and many times during its progress, the respirations become sighing and oppressed; or they may be increased in frequency, as was often observed by NIEMEYER and the French observers; but in uncomplicated cases they are normal, or slower than natural. It is scarcely worth while to mention that in a few cases bronchitis, or pneumonia, or simple engorgement of the lungs have occurred, indicated by the usual rational and physical symptoms and signs. But such complications have been, so far as I have examined, purely incidental.

7. Secretions.—It is matter for regret, that the state of the secretions, and especially that of the urine, has not more frequently been examined with care. The *quantity* of the urine, though somewhat diminished at various stages of the disease, was usually not far from normal. It has been seen increased in quantity, and of low specific gravity, by ALLEN, while on the contrary, HIRSH has seen it frequently, at the beginning, of of high specific gravity. Some few observers report it generally scanty.

Quality, so far as known, not far from normal. Dr. ROOKER, of Indiana, mentions a high color and excess of the urates, sometimes. HIRSH mentions one case, in which he saw a precipitate of the triple phosphates, and another, complicated with

typhus, in which the urine was deeply colored, was highly acid, and afforded copious turbid deposits of the urates. ALLEN generally found the urine smoky, albuminous, depositing sediment, and containing disorganized blood corpuscles. The urine of patients convalescing slowly was found, invariably, albuminous. Drs. LODGE and SAMUELS, of Marion, Illinois, report the urine sometimes albuminous.

The *perspiration* presents nothing peculiar. Some observers have seen copious perspiration at irregular periods of the disease, either general or partial. I have seen it most copious in those cases where the temperature of the surface was highest. Profuse perspiration has been, comparatively, oftenest observed by GALLUP, WALES, and ROOKER. The first two observers report a mawkish odor arising from the skin during perspiration.

8. Nervous System.—The symptoms referable to the nervous system are, almost beyond measure, the most conspicuous and important, and demand a large share of our attention. Whatever other symptoms are absent, referable to other organs, or systems of the body, symptoms which refer to the nervous system are never absent. As a general thing, all the functions of the nervous system give evidence of derangement at some period in the course of the disease. We shall range these symptoms under three heads:—1st. Motor. 2d. Sensory. 3d. Psychical.

1st. *Motor Disturbance.*—The state of the voluntary muscular system indicates the condition of the motor part of the cerebro-spinal nervous system. Two sets of phenomena appear: (*a.*) Involuntary muscular action in various degrees. (*b.*) Paralysis of motion. The former is by far the more frequent, and gives us, tonic spasm; clonic, or epileptiform spasm; and, finally, jactitation, or restlessness.

(*a.*) 1. *Tetanic, or Tonic Spasm.*—This is almost a constant symptom of the disease, and varies greatly, as to its extent and time of appearance. Rarely, cases have been seen without this symptom in any noticeable degree. It sometimes appears at the commencement of the disease; but commonly does not appear in any marked degree until after the onset. It is usually preceded by a sense of stiffness, occasionally of soreness, in the

affected muscles, far more frequently the former. HIRSH noticed painful twitchings to precede the rigid state of the muscles. It is also one of the most persistent symptoms, continuing many times far into convalescence. In a few cases it may disappear early, before death, or before recovery, but generally continues until death, or slowly disappears on recovery. Its appearance may be either gradual or sudden. The muscles almost invariably affected, are those of the back of the neck, and, next in order, the extensors of the back and flexors of the limbs. Cases have occurred, in which the muscles of the back have been alone affected, but they are rare. Trismus is, perhaps, next in order of occurrence. Cases presenting this symptom have generally proved fatal. Next in order, strabismus, perhaps, sometimes both eyes, generally one, and that one usually the left, according to HIRSH. It is almost without exception converging. Pleurosthotonos has been observed, as by M. LEVY, at Val de Grace. Contraction of the abdominal muscles, and of the flexors of one or more of the limbs, has been observed. Perhaps not anywhere, more appropriately than here, can we state the condition of the pupil. It is variable. It may remain normal, as has been observed by FORGET and others, and may be either contracted or dilated throughout the disease. But, generally speaking, the pupils are contracted in the early part, and dilated in the latter part, especially in grave or fatal cases. Occasionally, one pupil has been observed contracted, while the other has been dilated. [NIEMEYER.] In delirium, they are generally contracted or *variable*, and in some degree sensitive to light. In coma, they vary, but most times are dilated, and usually insensible to light. In rapidly fatal cases, in which coma appears early, and also paralysis, the pupils are generally dilated the whole course of the disease.

2. *Clonic, or Epileptiform Spasm.*—Convulsions are far less constant than tetanic rigidity of the muscles. We may have them of all degrees of severity, from simple tremors or twitchings of the extremities or muscles of the face, as recorded by HIRSH and others, to severe general convulsions. They may be partial, as of one arm, or leg, or finger, or of the face.

They may occur at any period of the disease, but are not seen in any marked degree in the majority of cases, perhaps. They are more frequent in young than adult persons.

Except in cases comatose from the beginning, or in which the coma is profound, there is generally restlessness. This must not be confounded with the tremors, etc., already mentioned. The latter are true convulsive movements, and may and do take place when the patient is wholly unconscious. The restlessness is due to the severe pain which is felt in a half-conscious state, just sufficient to arouse the patient to movements expressive of distress.

(*b.*) *Paralysis of Motion* is, comparatively, not frequent. It has been observed of various degrees, and at various periods of the disease. It is rarely general. Such cases are usually fatal. Partial paralysis is far more common. Hemiplegia and paraplegia have been observed. Paralysis of one limb has been noted, and paralysis of the muscles about the face often occur. Sometimes dysphagia, or loss of articulating power have been noticed. HIRSH and NIEMEYER have recorded cases of acinesia, paresis, ptosis, etc. Such cases as present the last two symptoms generally proved fatal.

Paralysis seldom appears at the beginning of the disease—usually after it has advanced somewhat—most commonly in the later stages. It may disappear suddenly, or persist until death, or slowly disappear with recovery, or, finally, it may prove persistent (though rarely) after recovery. This class of symptoms are, as a general thing, more unfavorable than the preceding.

2d. *Sensory Phenomena.*—For convenience, we may consider general and special sensation apart:—

1. *General Sensation Exalted—Hyperæsthesia.*—Most observers have met with cases in which hyperæsthesia was present, and some, as HIRSH, have met them frequently. I have seen two cases, in children, in which the hyperæsthesia was almost the only *well-marked* symptom. HIRSH has *always* found it when present, associated with *tonic contraction of the muscles.* It sometimes appears early and persists till late in the disease,

or into convalescence. It commonly affects the whole of the surface of the body, or nearly so, but may be partial. The surface is sometimes so painfully sensitive as that the slightest movement of the person, or simply touching the surface, or even a current of air produces excruciating distress, the patient complaining bitterly. This contributes to the restlessness and moaning of delirium, or even in somnolence or coma. It appears in some degree, either partial or general, at some period of the disease in, perhaps, the majority of cases.

2. *General Sensation Depressed—Anæsthesia.*—This is far more rare than hyperæsthesia. Like the latter, it may be either general or partial, and may disappear before death or recovery, but is seldom persistent. It usually occurs in the middle and later stages of the disease. In the cases observed by NIEMEYER, the mind was clear.

3. *General Sensation Perverted—Pain.*—Pain is one of the earliest and most common symptoms. Its most constant seat is the head. While it may be felt in any part of the head, its usual seat is the back part. It may be here, as elsewhere, various in character, but is generally severe, and is sometimes described as *terrible*. It is sometimes shifting in character. It is also persistent, being commonly one of the last symptoms to disappear in convalescence.

It is next most frequently observed in the back of the neck, where it partakes of the character of the pain in the head, but is not so constant. Next in order, is pain in the lumbar region, and after this, in the dorsal region and in the extremities. Pain is frequently referred to the peripheral extremity of a nerve, as to a limb, the face, etc. The only constant seat of pain is the head, though there have been exceptions. Pain in the abdominal walls was frequently and early observed by HIRSH. The pain was, as it generally is, increased by motion.

3d. *Special Senses.*—They are disturbed in a variety of ways and degrees. Impairment, and even loss of vision or hearing has not been uncommon. These disturbances might occur at any period of the disease, but generally in the middle and later stages, and in a few cases have proved persistent;

same may be said of the other special senses. An exploration, by means of the ophthalmoscope, of the interior of the eye, determining in this way the degree of vascularity of the choroid, would seem, in this disease, to throw some light on the state of the brain or its circulation.

4th. *Psychical Phenomena.*—1. Under this head, the symptom which is most common, is *delirium*, observed at various periods and in different degrees. Cases have occurred, in which no prominent symptom of mental disturbance has appeared during the whole course of the disease, but they are rare. Such are the purely spinal cases, in which the contents of the cranial cavity are slightly or not at all involved. While it may appear either at the outset, or in the middle or later stages, it usually appears in the early part of the disease. It is usually remittent, and may be intermittent, or may alternate with coma. [FORGET.] It may come on suddenly or gradually. It usually does not appear until after the chill, headache, etc. It is not so constant as these symptoms, though some deem it characteristic. It may, as already remarked, exist in various degrees, from simple mental wandering when undisturbed, to that the most violent. It may be pleasing or amatory, or such as leads the patient to be fierce and untractable. The delirium generally precedes the coma, but FORGET, *e.g.*, has seen it otherwise. When delirium is present, the pupils are seldom dilated, may be normal, but are generally contracted in some degree and variable, and, as already remarked, in some measure sensitive to light.

2. *Coma.*—This symptom is not so constant as delirium. Out of 46 cases, Mons. FORGET saw 8 cases where coma set in at once. It occurs with the least frequency in the beginning of the disease, most so in the later stages. It is a more unfavorable symptom than delirium, and usually, though not always, indicates effusion, serous or otherwise. Those cases in which decided coma occurs, comparatively seldom recover, whether it appears early or late. It may, like the delirium, prove remittent or intermittent, in the latter case alternating with delirium. During coma, the pupils may be normal, or even contracted

somewhat, though rarely. They are almost uniformly in some degree dilated and insensible to light. Coma may vary in degree, from simple dulness or somnolence to that the most profound.

9. Periodicity and Stages.—This disease is not characterized by well-marked stages. The symptoms are generally somewhat periodical or rythmical in their progress. This has been particularly noticed in localities where periodical fevers prevail. To such an extent has this been the case in some places, especially in the West, as to induce the belief among some physicians that it was a form of "pernicious" malarial fever. In such instances of the disease is it that the quinia treatment has proved so beneficial.

10. Duration.—The duration of the disease varies from a few hours, to weeks or even months. I have seen one case die within three hours from date of attack, and have seen another pass along for three months. RUMMEL remarked the disease to run its course sooner at the beginning of an epidemic, than at its close.

11. Mortality.—It is greatest during the first four days of the disease, and among the young; and at the beginning rather than at the close of the epidemic. HIRSH reports that of 391 fatal cases, 359 were under 15 years. NIEMEYER found that of 66 males, 20 died; of 60 females, 18 died; of 54 cases, from 1 to 5 years of age, 18 died; 40 cases, from 5 to 14 years, 9 died; 27 cases, from 15 to 23 years, 10 died; and in 5 cases, above 23 years, 1 died. The following mortality table of some of the epidemics in France, is mainly taken from the monograph of M. BROUSSAIS:—

Nancy,	8	deaths in	28	cases, are equal to		1 in 3.50
Le Mans,	3	"	9	" "		1 in 3.00
Ancenis,	4	"	12	" "		1 in 3.00
Mont Brison,	16	"	47	" "		1 in 2.93
Caen,	4	"	10	" "		1 in 1.25
Poitiers,	8	"	20	" "		1 in 2.50
Versailles,	111	"	227	" "		1 in 2.04
Metz,	22	"	40	" "		1 in 1.81
Perpignan,	28	"	50	" "		1 in 1.78
Strasbourg, (Mil. Hosp.)	108	"	184	" "		1 in 1.70
" (Inhab,)	90	"	150	" "		1 in 1.66
Laval,	44	"	69	" "		1 in 1.56

Colmar,	5	"	7	"	"	--------- 1 in 1.40
Bayonne,	21	"	28	"	"	--------- 1 in 1.33
Aigues Mort,	120	"	160	"	"	--------- 1 in 1.33

Thus, in 1035 cases, we have 592 deaths, or 1 in 1.76. In the Southern States, during the war, where the disease prevailed extensively, one instance is mentioned, where there were 66 deaths in 154 cases; another, where, out of 40, 24 died; and in 35 cases, reported by Dr. S. C. YOUNG, of Grenada, Miss., there was not one recovery. In the Southern States the mortality has been estimated at from 60 to 80 per cent. [GAILLARD, *Rich. Med. Jour.*, 1866.] Mons. GASSAUD, at Avignon, reports only 2 cases lost in 126! This he attributes to the free and early use of quinia.

12. Prognosis.—At *all* periods unfavorable, but especially so during the first four or six days. After this time, the prognosis would seem more hopeful. It is generally more grave in the sporadic than in the epidemic form; and, on the whole, is less grave than in well-marked cases of tubercular meningitis. The question of *diagnosis* will receive consideration in another part of this report.

13. Complications.—They are *general* and *special.* Among the former may be mentioned erysipelas, malarial influence, etc. HIRSH and RUMMEL did not notice any other epidemic or important general disease to coincide with the Dantzig epidemic. HIRSH saw one case complicated with typhus, and another with diphtheria. ALLEN has seen erysipelas as a common complication. The same observation has been made in various parts of this State during the late epidemic. Dr. ROOKER, of Indiana, has seen it occur in connection with diphtheria, and, moreover, has noticed where hog cholera has prevailed most, there this disease has prevailed most.

While many observers, and especially late German observers, have seen the disease rarely complicated with typhus, and deem it a distinct disease from typhus; on the other hand, it has been so constantly associated with typhus in the French epidemics, as to have led many of the French observers to identify it with typhus. This opinion is held by many observers and writers, both in Europe and this country. The examination of the

question, as to whether this disease is or is not a form of typhus, will be made in a subsequent part of this report. Such are the most interesting of the general complications which have been observed.

Among the *special* complications, may be mentioned pneumonia, which is the most frequent, perhaps. This complication seems to have been exceedingly common in the epidemic which visited New England in the early part of the present century. Cases of this kind have been often noted. But there does not seem to be any good reason for regarding the coincidence of these diseases as anything more than accidental, as may appear more fully hereafter. Out of nearly 1900 cases, HIRSH has only mentioned *one*. Inflammations of the joints, or of various other parts of the body, and, in some epidemics, of the serous membranes, have been reported by numerous observers. The latter seem to have been strikingly so in some of the French epidemics, and in some of the localities in the New England epidemics in the beginning of this century.

Such are the most important facts of the symptomatical history of "cerebro-spinal meningitis."

II. POST MORTEM HISTORY.

Here I have been able to collect the evidence afforded by not less than 200 cadavers, which is regarded as affording a sufficient basis for trustworthy generalizations. When they have been given singly and in detail, I have analyzed individual cases. As was observed regarding the symptoms which refer to the nervous system, it may be said of the *post mortem* changes, they are almost never absent from the cerebro-spinal cavity. To this part of the organism, so pointedly referred to by the symptoms, our attention will now be directed, to try if we can find in the after-death appearances any adequate explanation of the morbid phenomena during life.

1. *Central Nervous System and its Envelopes.*—The scalp has been frequently found congested, and beneath it, in some instances, extravasated blood; in other cases, nothing of the kind has been seen. The cranial bones, and especially the diploë, has been found deeply colored with blood in some cases,

and, in cases of some duration, NIEMEYER has seen a blue color of the cranial bones, in one case very intense. Occasionally spots of extravasated blood have been found between the cranial bones and dura mater. It has been more common to find effused blood and congestion on the outer surface of the dura mater of the cord, and in the areolar tissue and parts adjacent to it. Such does not occur in a majority of cases, in any marked degree.

1st. *Dura Mater and its Sinuses.*—While I have seen not more than two cases reported, in which the dura mater gave undoubted evidence of structural disease, I have seen no case reported, in which there was not abnormal fulness of its vessels, generally the sinuses and larger veins. In most cases, the sinuses, in particular, have been tumidly filled with blood of a dark color, and, most times, fluid in consistence, or devoid, for most part, of coagula, though not always the latter. *E.G.*, Prof. MAISCH relates a case, in which the blood in the sinuses presented firm coagula, which was true also for the blood in *all* the blood cavities. In *no* case, so far as I have, has seen an exudation been reported on the free or serous surface of the dura mater worthy of note, unless we mention an increase of the serous fluid in the cavity of the arachnoid which is sometimes colored or presents small flocks of lymph, but is usually not changed apparently, except in quantity. This is true for both the cranial and spinal dura mater. They almost never present *well-marked* evidences of *structural change*, or a *firm exudation* on the free or serous surface. Those cases where the congestion and injection of the dura mater was most decided, were found by HIRSH to be the cases where there was the smallest amount of effusion into the ventricles, and *vice versa*. NIEMEYER has seen a case, in which the texture of the dura mater was infiltrated with pus. With these exceptions, and a very few others of like kind, it has uniformly been reported healthy.

2d. *Arachnoid.*—The arachnoid has not often presented evidence of disease. *Generally* about normal, though sometimes discolored, or even apparently thickened and rendered in various degrees opaque. Its freedom from disease is, probably,

partly owing to the fact that it is so sparsely supplied with bloodvessels and nerves. The remark just made about its *post mortem* condition, will apply only to the *visceral* layer. The *parietal* layer, or that which lines the dura mater (if we regard this as an actual continuation of the arachnoid,) is almost uniformly healthy in its appearance. The cavity of the arachnoid, many times, does not seem to contain more than its normal quantity of fluid. But most frequently, perhaps, it is increased and sometimes discolored. Occasionally, it is excessive in quantity. When the arachnoid has been roughened, it has generally been the visceral surface of the visceral layer. As regards exceptional cases, NIEMEYER reports one in which the arachnoid was highly injected. He has found the fluid in the cavity of the arachnoid, in a proportion inverse to that in the ventricles. RUMMEL and a few others, have seen the arachnoid adherent to the dura mater; and Dr. G. A. MOSES, of Mobile, is represented in the *Richmond Medical Journal* of this year, as describing the arachnoid as almost always giving evidence of acute inflammation. I have not found it so in my examinations.

3d. *Pia Mater.*—Unlike the two cerebro-spinal investments just mentioned, the pia mater has almost uniformly presented the appearances of disease. Rarely, cases have occurred, in which no evidences of structural change or exudation have been observed, but *not one* where *congestion* has been absent. The rule is, that it presents the most indubitable evidences of disease. Those parts of it most frequently diseased are, at the base of the brain, about the optic commissures; the interpeduncular space behind the commissure; the pons Varolii and medulla oblongata; under surface of the cerebellum; and along the fissures of Sylvius. After this, the surface of the hemispheres is the most constant seat of disease. The congestion and the exudation, when present, may occur uniformly over the surface, or, as invariably happens with the latter, is found along the course of the sinuses, and bloodvessels, and large fissures, and along the fissures between the convolutions. Next, the pia mater of the cervical portion of the cord is most fre-

quently diseased, and of this part and the medulla, the *posterior aspect* is most often diseased. M. Levy found in 44 cases, the posterior part almost exclusively affected in 27 cases. On the other hand, I have not noticed a case where the anterior half alone was affected. Next in order, the lumbar and lower part of the dorsal regions are most often affected; and, lastly, the pia mater of the dorsal portion seems most frequently to be free from disease. Sometimes cases have occurred, in which the spinal element has been absent, but the converse has been exceedingly rare.

4th. *Exudation—Serous.*—Except in some cases, where death has occurred either with extreme suddenness, or in cases of long standing, there is found to be an increase of the sub-arachnoid fluid, especially at the base of the brain. In recent cases, it consists in a simple increase of the natural fluid, but in most cases, it is colored yellowish or reddish by pus or blood, and varies in quantity, from a few drachms to several ounces. It varies in consistence and has been found by M. Forget almost gelatinous. Small flocks of lymph, pus, and blood corpuscles, etc., as already intimated, are often found. It is most abundant where there is the least effusion in the ventricles, and *vice versa*. In cases of several weeks' duration, the membranes have been found unusually dry.

5th. *Exudation—Plastic.*—Except in those cases where death seems to have taken place too soon to permit of such a result, there has been found more or less plastic exudation, most abundant in such places as have been already indicated. It varies in consistence, extent, color, etc. It may be a soft, friable, pus-like layer, or have a gelatinous consistence, or be firmer yet, as coagulated fibrine. It may be nearly transparent, or have a grayish color, being in various degrees opaque, or may have a white or creamy appearance, or be tinged various hues by either pus or blood or both. It may cover a large extent of surface, or be disseminated in patches here and there. But it is always, when present, found along the course of the large vessels and the fissures, and about the roots of the nerves, whether the cranial or spinal, the posterior roots of the latter,

in particular. It is, when present, on the surface of the pia mater, but may be infiltrated into its structure, or beneath it, into the nervous substance for a short distance. It varies in thickness, from a mere film to a line or two, or more. Its consistence depends much on the duration of the case, being most so in cases which have some duration.

In the exudation the microscope has revealed free nuclei, and thin walled cells containing two or three nuclei. [MAISCH.] In the *American Medical Times*, for April 30th, 1864, a case is reported by Dr. FROTHINGHAM, in which the exudation showed no pus corpuscles. But WUSCHENDORFF and other observers have seen pus corpuscles, as we will see hereafter, perhaps.

6th. *Ventricles.*—The ventricles have generally been observed with more than the normal quantity of fluid in them; occasionally, the quantity has seemed to be normal. It has been found to vary from a small increase to several ounces, and in a case reported by Dr. READING, the quantity was so great the ventricles were ruptured. M. TOURDES saw, in 44 cases examined at Strasbourg, 26 in which the ventricles were distended; and in 44 cases examined by M. LEVY, at Val de Grace, 18 presented distended ventricles. NIEMEYER mentions a case, where the ventricles contained as much as six ounces of fluid.

The character of the exudation has varied from clear serum, sometimes mingled with pus, or colored with blood and the like, [FORGET, LEVY, BROUSSAIS, HIRSH, RUMMEL, NIEMEYER, DRAPER, etc.,] to the purulent and gelatinous exudation already described as occurring on the pia mater, and which frequently extends into the anterior and posterior, and even the middle, horns of the lateral ventricles, and is found in the other ventricular cavities. [NIEMEYER.] The exudation generally occupies the *floor* of the ventricular cavity.

The walls of the ventricles are frequently injected, which seems most often true of the roof of this cavity. The plexus choroides is nearly always injected and bathed in the exudation, as the optic thalami and striated bodies also are. The ventric-

ular walls have been found softened, and ALLEN speaks of having seen ecchymosed spots in them.

7th. *Nervous Substance.*—This, in the majority of cases, has been reported as healthy. Occasionally it has been seen paler than natural, in cases of some standing in particular. [NIEMEYER and others.] More frequently it has been seen congested in various parts and degrees. FORGET has found in chronic cases, a turgescent state of the brain matter, and in more recent cases, some injection of the nerve substance. The same appearances are, substantially, given by M. BROUSSAIS. M. LEVY found in 44 cases, injection of the nervous substance 9 times. NIEMEYER has met with cases, in which the brain was of a dark or a light red color. HIRSH has seen a case, in which the brain generally was injected; one in which the great ganglia, at its base, and another, in which the cerebellum was alone injected. LIDDELL reports congestion in one case; and the cases reported by Dr. READING were all of them more or less so. The latter observer twice saw what seemed to be an abscess of the cerebellum—collections of pus in the cerebellum —in one case, nearly a gill. The *spinal cord* sometimes participates in this congestion.

Softening, has occasionally been reported in chronic cases. NIEMEYER records it in 2 cases out of 15. One of the cases was of 49 days standing, and exhibited cheesy metamorphosis. M. CHAUFFARD observed softening, comparatively often, at Avignon. DRAPER mentions one case of partial softening. In three of Dr. READING'S cases, the brain was softer than natural. The brain and spinal cord have rarely been seen œdematous. NIEMEYER and DRAPER, each report a case. Dr. HUTCHINSON reports a case, in the *American Medical Journal*, for July, 1866, etc. The convolutions have been observed flattened in long-standing cases, by M. FORGET; also, he has seen the convolutions adherent, one to another. A similar case is reported by NIEMEYER. The same remarks are true, though less frequently, of the spinal cord.

2. *The Chest.*—The chest has yielded no characteristic evidences of disease, and, in the majority of cases, perhaps, nothing

strictly abnormal. In many cases, the common hypostatic congestion has been observed in the lungs. M. LEVY has seen 9 cases out of 44. But occasionally the lungs have been found deeply congested with dark blood. Such was true in the case reported by Dr. LEVICK, and in two cases reported by Dr. LIDDELL. The latter gentleman found about four ounces of serum in either pleural cavity in one case. Pneumonia was found twice by LEVY, in 44 cases. Dr. READING reports 1 case in 7, where marks of pleuro-pneumonia were present. In 3 of the 4 cases examined by Dr. J. C. WARREN, he found extensive thoracic lesions; in one, double pleurisy, with extensive purulent deposits. M. BOUDIN says, it was no uncommon thing to have purulent deposits in any or all the serous cavities, especially the tunica vaginalis. The pericardium has been occasionally found congested, as in one case reported by GERHARD, and one each by READING and WARREN. M. BILLERY, at Grenoble, speaks particularly of the lesions of the pleural and synovial cavities. In the case of GERHARD and some few others, spots of extravasated blood, were seen in the structure of the pericardium. Others have found the amount of serum increased, even to several ounces. [LEVY, FROTHINGHAM.] This comprises most of the thoracic lesions I have noticed. They were far more common in the French and New England epidemics than I have learned them to have been elsewhere. In the late German epidemics, *e.g.*, they were comparatively unknown.

3. *Abdomen.*—The organs within the abdomen have usually presented nothing strikingly abnormal. The stomach has almost uniformly been found healthy or paler than natural.

NIEMEYER has seen the mucous coat congested. In the majority of cases the small intestines give some evidence of disease. This is generally slight hyperæmia, especially in the neighborhood of vascular parts, as the patches of Peyer and the intestinal glands. LEVY reports slight enlargement of Brunner's and Peyer's glands in about one-third of the cases he saw. Much the same, by FORGET and BROUSSAIS. The former saw one case of ulceration of the intestines. NIEMEYER reports much the same. TOURDES, at Strasbourg, saw two cases of

ulceration in 46, and 32 of the cases showed some slight follicular lesions, while 8 showed none of any kind.

Hemorrhagic or ecchymosed spots have been found occasionally. Once by NIEMEYER, in the great end of the stomach. In a few cases, ecchymosed spots have been observed in the intestinal walls, or mesentery, etc. [LEVICK, JEWELL, (of Pa.) NIEMEYER.]

The liver, spleen, and kidneys have generally been found healthy. But cases of congestion in various degrees are reported. [NIEMEYER, RUMMEL, LIDDELL, etc.] In Dr. LEVICK's case, the kidneys and bladder presented ecchymosed spots. In two of Dr. LIDDELL's cases, the bladder contained urine charged with albumen. The urine, under such circumstances, was observed by NIEMEYER to throw down a copious sediment In 4 cases, in which the kidneys were submitted to the microscope, Dr. DRAPER reports fatty degeneration. It was observed in one case, that of a little girl who died 44 hours from date of attack. There were no signs of previous disease in these cases. The serous membrane lining the cavity of the abdomen, has generally been found healthy. In some cases, it has presented evidence of disease. This was true, for example, in some of the epidemics in France.

4. *Vascular System.*—The heart and bloodvessels have seldom presented anything worthy of note. The heart has sometimes been found paler than natural, in others increased in color, and, rarely, softened. In the large majority of cases, the blood found in the cavities of the heart and bloodvessels has been darker and more fluid than natural. In a few cases, extreme fluidity has been observed. [JEWELL, (of Pa.) LEVICK, LIDDELL.] But M. FAURE VILLAURE, at Versailles, found generally large yellow fibrinous clots, in the heart in particular. The same was often observed at Strasbourg, in the province of Landes, Nancy, Lyons, Colmar, etc., in 1837. The blood drawn during life at these places, exhibited much buffy coat. In the case reported by GERHARD, small coagula were observed, as they also were in the cases reported by Dr. DRAPER. NIEMEYER has seen clots in several cases; and in one

case examined by Prof. MAISCH, already referred to, *very firm clots* were found throughout the vascular system, *even in the sinuses* and large vessels within the cerebro-spinal cavity.

Various other appearances have been noted by observers. The muscles have most times, perhaps, appeared natural, occasionally paler than natural. A few observers report them redder than natural. [GALLUP.] The muscles which have been contracted, as those of the back of the neck, have been found redder, or darker, and softer than natural. The same muscles were observed by RUMMEL to be least rigid after death. Extravasated blood has been observed, not unfrequently, in spots in the structure of various organs.

Such are the *most important post mortem* appearances noticed by observers, either in this country or Europe. This summary of facts, as remarked in the beginning, has been drawn from not less than 200 cases.

III. ETIOLOGICAL AND PATHOLOGICAL HISTORY.

Proceeding as we only can safely, as a rule, in medicine, from *effects* to *causes*, with the materials and facts from the foregoing analysis before us, we are ready to begin the discussion, as to the *causes* and *nature* of the disease. In doing this, I shall invert the order of discussion observed thus far, in beginning with certain general propositions, and under each shall collect the particular evidence on which it rests. These propositions are really the conclusions reached, but have been arranged in the manner which follows, for convenience of discussion. The nature of a disease is to be determined from the phenomena or *effects* perceived and its *causes*. The former I have endeavored to show, in part, in the above analysis. The *effects* having been presented, let us now turn to the *causes*, as the next step in the enquiry.

In the class of diseases to which this seems to belong, to determine causes, satisfactorily, is confessedly one of the most difficult tasks in pathology, and nowhere is more *positive* light required, than on the question of epidemic causes in general. Such causes, while they are clearly matters of inference, are, thus far, mainly *unknown*, as regards positive evidence. We

are obliged to admit their existence, but can offer but little, if any, direct proof of it.

1. I proceed, then, to remark, in the first place:—That the disease depends primarily, in all probability, on a specific external epidemic cause, unknown, save in its effects. Various known external causes, either singly or combined, have been assigned to this disease, such as cold, foul air, social misery, insufficient or bad food, change from civil to military life, fatigue, nostalgia, abuse of alcoholics, depressing agencies of various kinds, heat of the spring sun, crowding in small houses with defective ventilation, and many others, have been assigned by different observers, not only as *predisposing*, but also as *efficient* or *essential* causes. That such agencies may and do predispose the system to the inroads of disease, whether the one under consideration or any other, by impairing the energies of the organism, there can be no reasonable doubt. But that any of the causes of disease mentioned above, or others of a like kind, are capable of *originating* this disease, seems exceedingly doubtful, as will appear from the following considerations:—

In general, it may be remarked, in relation to such assumed causes, that they exist thousands of times without either producing or being accompanied by "cerebro-spinal meningitis." This is a matter of almost daily observation, and to suppose they should at one time produce the disease, and *not* at other times, is destructive of the very idea of causation. On the other hand, the disease has prevailed many times in the absence of, at least most, if not all these assumed causes.

The disease, for example, as regards cold, has often been prolonged into the hot season, and has even begun as an epidemic, and prevailed extensively, in midsummer, as many as eight times, in France. It has prevailed in rural districts as well as civic districts, and has even seemed to prefer rural districts in some cases, as in our own late epidemic. It has appeared among both rich and poor; on the uplands as well as lowlands; among those well fed, as well as among those poorly fed; among those who have enjoyed thorough ventilation, as well as those under an opposite condition; among the civil, as

well as military population, and so in relation to the whole catalogue of these known assumed causes, of which the malady seems to be wholly independent, except that they may, in a general way, predispose to, or intensify it. As we shall see, the disease has an individuality sufficiently well marked and constant to necessitate the conclusion, in so far as it presents constant phenomena, that it is due to a constant cause, which cannot be alleged of any known cause. For *not one* of them has been observed to be constantly associated with the disease. Since, then, we are bound to admit a cause, we can do no other than conclude, if the essential cause be external or exopathic, it is one, which, though unknown directly, is special, and, by reason of its apparent independence of known external conditions, and its wide field of operation, must be assigned to that obscure but admitted class, *epidemic causes.*

But the cause may not be external. It may be internal or autopathic. Such causes may be either *predisposing* or *essential.* Our concern at this time is particularly with the latter. Among autopathic causes, may be mentioned:—

1st. *Age.*—While no age has been exempt, the young have been the principal victims, and, as a general thing, the younger the age, the greater the mortality. The period between 10 weeks and 7 years, has furnished a greater mortality than any later period of equal length. But, in Berlin, according to HIRSH, the disease was mostly confined to the adult population. In other instances, the period from 18 to 24 has yielded a larger mortality, than from 10 to 18. But, as a whole, the disease has prevailed vastly more among the young, vigorous, healthy, and athletic, than among the aged or infirm. At Belfast, *e.g.*, Dr. MAYNE says, the disease was almost exclusively confined to boys, between the ages of 7 and 12. Most of the cases seen by HIRSH, were below 15. The same was observed in the epidemics in Denmark and Sweden, and at Stettin and Bromberg. Reports of the same tenor, have been made by NIEMEYER, RUMMEL, and others. At Rochefort, according to LEFEVRE, the greatest mortality was between the ages of 30 and 40 years; at Strasbourg, between 14 and 21; at Aigues

Morte, Val de Grace, Gibraltar, Lisle, etc., much the same. For further matter on this topic, see the paragraph on mortality, above. It must be remembered, however, that the mortality reports made in France, in some cases refer almost exclusively to the military population, in which case we would, of course, expect the greatest mortality at a period necessarily different from what we might have it among the civil population.

2d. *Sex.*—All reports, so far as I have seen, represent the disease as prevailing most among males—in a few cases, almost exclusively so.

3d. *Hereditary Influence.*—There are no good reasons to suppose they play any part as essential causes of the disease, though it is possible they may exert some influence as predisposing causes.

But, in this case, it may be, something has been *retained* in the blood, which should normally have been removed from it by some one or more of the emunctories of the body, as urea, *e.g.*, by means of which the blood is poisoned, and becomes the cause of the disease. Or, the blood *may* have undergone some change in *quantity*, either as a whole, or in respect of some one or more of its constituents. Or, some change may have taken place in the *quality* of the blood or some of its constituents, in which cases it might be rendered unfit, on the one hand, to maintain a healthy state of the structures, and, on the other, a positive cause of disease.

As regards the first case, it may be remarked, that so far as the evidence goes, there does not appear to be any change in the secretions, either as a whole or in respect to their ingredients, sufficient to account for the phenomena of this disease. The urine, for example, has usually been reported healthy in appearance, and nothing concerning the other secretions worthy of note.

It is true a few observers have seen, especially in the later stages of the disease and during convalescence, albumen in the urine, and sometimes a deposit, more or less copious, of either the urates or the phosphates. [NIEMEYER, ROOKER.] But other observations do not accord with these, and, besides, the same

conditions appear in forms of disease not even analogous to this. It must also be remembered, that it generally requires some time to effect such a change in the secretions as, in this way, to produce marked symptoms, while this disease frequently has its whole progress from a state of apparent health to a fatal termination in a few hours. And it would be of no avail in the present case, were we to show that even marked alterations of the secretions had occurred *during* the *course* of the disease, unless it could also be shown they appeared before the onset of the disease. The evidence is pretty conclusive that the essential cause of the disease is not to be found in retained secretions.

2. That the blood has been deprived to any considerable extent of its elements, or that there has been a considerable quantitative change at any stage of the disease, does not appear from the evidence to be a fact, or even probable in any noteworthy degree.

3. That some change has been wrought in the blood or some of its chief constituents, by which it acts unhealthily on the living structures of the body, seems highly probable, as will appear from the following facts and considerations. The particular changes which have been observed under different circumstances and at different times, are as follows:—

There has been found in all the cases examined, uniformly, an increase of fibrine, and, generally, of the corpuscles, as we have already seen, before death. As regards the condition of the blood after death, we have seen that, while in the large majority of cases the blood is not only darker, but also more fluid than usual, that, on the contrary, in some well-marked cases, it has not been so, as in the case of Prof. MAISCH, in which the blood was firmly coagulated in the heart and vessels. But that this change of color and fluidity noticed in the blood of most cases after death, is not a *cause* of the disease, but, on the contrary, only a *part* of the disease, seems quite certain, for the evidence goes to show a *contrary* state of the blood during the life of the patient.

As already remarked, the corpuscles are notably increased, as shown in the cases examined, from 131, about the normal

standard, to 136 or even 142 parts in 1000. But whether or not they have undergone any change *per se* is matter of conjecture, since the evidence does not show. But, in most cases, it would seem hardly possible for a change to occur, either here or in the fibrine, or any other known constituent of the blood, with the suddenness which would be required to explain the frequently abrupt onset of the characteristic symptoms of the disease. Except the *color* of the blood before death, which is unusually bright, generally, and a very few unimportant facts relating to other changes, neither striking nor constant, these are all. Now, so far as we know, blood-changes quite similar to these take place in other forms of disease different from this, and in whatsoever relation we regard these blood-changes to the disease, they must have a cause, and this cause can scarcely be other than external. But we have found already that there is no evidence that the ordinary or positively known causes of disease have any direct share in its production.

It is thus seen, that the probabilities are against the existence of any *positively known* external cause, and that what is known of the state of the blood and secretions would hardly justify us either to say that the blood, because of its changes, became the *cause* of the train of symptoms and morbid appearances observed, or were *themselves initiated* by an internal cause. If these remarks be just, it must follow that we adopt, as the only alternative, an external cause as the essential one. That this must be the truth, farther appears, because:—

1st. The disease is so widespread in its prevalence, and occurs under such a variety of circumstances, and in these respects so nearly resembles undoubted epidemic diseases, as cholera, and presents such characteristic phenomena as to make it alike impossible for us to explain them by any known external cause or by any changes in the blood, the which, if they do occur, constitute rather a *part* of the disease than the initial or starting point in causation. We are thus forced to hypothecate a cause, such as the phenomena require.

2d. The suddenness of the attack is *so* marked, and its progress to a fatal termination so rapid, and the affection of the ner

vous system, as shown by the symptoms and the *post mortem* appearances so early and so constant, as to beget the belief that some energetic poison has been introduced into the system, because we know how many poisons may be and have been taken into the system, which, if they have not produced the same, have, nevertheless, produced symptoms so far similar as to leave no reasonable doubt in our minds that the symptoms of this disease have been produced in some similar way.

The leading symptoms and appearances are so constant, the sphere of operation so wide, and the attack, in many cases, so sudden, as to require a generality and uniformity of causation, which can be secured in no other way than by admitting as true the proposition we began with. This examination of the question of causation will not appear superfluous to those who are familiar with the discordant opinions held on this subject.

The next proposition I would lay down, is:—That it is a disease *sui generis*, a disease essentially different from and independent of other recognized forms of disease.

That this is not the opinion generally held, will appear by showing what are the opinions which have been and still are held by numerous eminent members of the profession, both in this country and Europe. That the disease is only a form of typhus, has been held by a large majority of European writers, perhaps, as well as by many in our own country.

Among the former, may be mentioned HILDENBRAND, PRINGLE, OZANAM, SYDENHAM, LEFEVRE, MATTOT, BILLERY, CHAUFFARD, BOUDIN, BROUSSAIS, MURCHISON, AITKIN, and many others. Among the latter, WOOD, DRAKE, DRAPER, and others.

That the disease is simply a form of the ordinary "congestive" or "pernicious" malarial fever, has been the opinion of many physicians practising in the paludal districts of the West, and of some few *writers*, apparently, as MARSHALL HALL, (Prac. Med.) Others have supposed the disease identical with erysipelas in its essential nature. Others have supposed the disease simply malignant scarlatina; while another thinks it quite probable the causes of diphtheria and hog-cholera are identical with the cause of this disease. On the other hand, several

observers in this country and Europe believe it to be a disease *sui generis*.

These diversities of opinion show us the necessity of a careful examination of the *facts* relating to the disease. It is for want of this that we have such contrariety of opinion. While a broad survey and analysis of the facts from different times and places will show that a *certain group* of symptoms and appearances are never absent in any case, it will, on the other hand, show that the disease has often had imparted to it a peculiar hue or tendency, so to speak, by the prevailing "constitutions" and diseases, as the typhus, malarial, etc., so much so, many times, as almost to mask the characteristic symptoms of the disease, as was observed in relation to typhus in the French epidemics. Or, as we have seen, it may be complicated with some other form of disease, as pneumonia, as was observed in the epidemic which prevailed in New England, in the early part of the present century. The only one of the opinions above referred to which seems to demand a careful examination, is that which holds "cerebro-spinal meningitis" to be identical with typhus. That the two diseases are not identical, will appear by drawing a parallel between their symptomatical, *post mortem*, and etiological histories:—

CEREBRO-SPINAL MENINGITIS.	TYPHUS FEVER.
I. *Symptomatical History.*	*Symptomatical History.*
1. The attack is sudden and the progress, as a general thing, rapid. A few exceptions occur.	1. Attack almost never sudden. Progress generally slow. Average duration 21 days. The "blasting typhus," which visited the French army at Saragossa, Torgau, and Wilna, were simply unusual *exceptions*, and as such they do not establish a *rule*.
2. The secretions not much disturbed, as a general thing.	2. Secretions almost always much disturbed.
3. Generally introduced by a decided or severe chill.	3. Generally begins with rigors, but not often decided chill.

4. Heat of surface does not, on the average, rise above normal. Color, usually not far from natural. Face generally pale in early part of disease, but sometimes flushed or cyanotic.

5. Spots do not often appear. Vary as to kind, duration, time of appearance, disappearance, etc. Seldom elevated. No sudamina.

6. The blood drawn during life has always shown a firm coagulum, bright color, and often a decided buffy coat. Analyses have shown a marked increase of fibrine and corpuscles.

7. Tongue generally not brown or dry, unless in later stages.

8. Vomiting almost a constant symptom early in disease, almost exclusively sympathetic. Bowels generally normal or constipated.

9. Respiration not always, but on the average, *slower* than natural.

10. Urine generally not far from healthy in quantity and quality.

11. Tonic spasm of extensors of back of neck, and back, and flexors of limbs, almost al-

4. Heat of surface *does* rise above natural, the average being so high as 107° Fah. "Calor mordax," surface and especially *face*, always *dusky*, often positively muddy. Face usually flushed, and expression dull.

5. Spots pretty constant and generally elevated (rubeoloid.) Appear from 5th to 8th day. Remain for 11 or 12 days. Above 20 years, spots all but constant.

6. Blood drawn during life loosely coagulated. No buffy coat worthy of note. Fibrine and corpuscles both evidently deteriorated. The *former* diminished and the corpuscles variable.

7. Tongue generally brown or dry almost from commencement.

8. Seldom vomiting. Diarrhœa frequently.

9. Respiration not always, but on the average, more frequent than natural.

10. Urine seldom normal in quantity or quality.

11. Neither tonic or clonic spasms are present, only very rarely.

ways present. Clonic spasms not unfrequent. Paralysis of motion sometimes present.

12. Hyperæsthesia is quite frequent and often general. Anæsthesia sometimes present.

13. Pain in the head often "*terrible*," and always *severe*. Worst in *back* of head, neck, and spine.

14. Special senses *often* markedly disturbed, and in many ways.

15. Delirium almost constant in early part of the disease, and *active*. Mental faculties and senses not always dull.

II. *Post Mortem History.*

1. The only constantly diseased appearances are those found in the cerebro-spinal cavity.

2. Pia mater constantly shows unhealthy appearances.

3. Exudation always present where time is given.

4. Ventricles often diseased.

5. Serous exudation frequently abundant.

6. Blood generally dark in color and fluid in consistence, but not always.

III. *Etiological History.*

1. Is *not essentially* affected

12. Marked hyperæsthesia seldom present. The same of anæsthesia.

13. Pain in the head *not* severe usually, and more often in *front* of the head.

14. Special senses *not* markedly disturbed.

15. Delirium *not* constant and not always active, but low or muttering, rather. Mental faculties and senses almost *always* dull.

Post Mortem History.

1. No constant diseased appearances, unless those of the blood. "*Other* lesions may be considered incidental." [Wood.

2. Does not show such often.

3. Exudation *not* always present; on the contrary, comparatively seldom.

4. Ventricles seldom diseased.

5. Seldom abundant.

6. Blood *always* fluid and dark.

Etiological History.

1. *Is* affected essentially by

by, or dependent *on*, *known* external conditions.	known causes and external conditions.
2. Depends on a peculiar epidemic *external* cause, without reasonable doubt.	2. Does *not* seem to depend essentially on a peculiar external epidemic cause.
3. Affects all ages and both sexes, but prevails *most* among males, and the *young*, vigorous, and healthy.	3. All ages and both sexes, but *most* among *adults*.
4. Prevails in all conditions and districts—in the country, as well as the city.	4. Almost exclusively among the poor, ill-fed, and in overcrowded localities; comparatively seldom in the country.
5. Neither contagious nor infectious, in all probability.	5. Certainly contagious under some circumstances, and is probably infectious.

[*Continued in the next No.*]

Book Notices.

A Guide to the Practical Study of Diseases of the Eye; With an Outline of their Medical and Operative Treatment. By James Dixon, F.R.C.S., Surgeon to the Royal Ophthalmic Hospital, Moorfields, London. From the third London edition. Philadelphia: Lindsay & Blakiston. 1866.

This is a neat little volume of 400 pages. The former editions of the work have been long enough before the public to be familiar to the reading part of the profession. It is concise, plain, and practical; just such a manual on diseases of the eye as the student and practitioner will find convenient and useful. For sale by W. B. Keen & Co., 148 Lake Street. Price $2.50.

Instructions in the Preparation, Administration, and Properties of Nitrous Oxide, Protoxide of Nitrogen, or Laughing Gas. By Geo. T. Barker, D.D.S., Prof. of Principles of Dental Surgery and Therapeutics, in the Pennsylvania College of Dental Surgery, etc., etc. Philadelphia: Rubencame & Stockton. 1866.

This is a monograph of 61 pages, printed on plain type and good paper. It is a very useful work for all such as desire familiar and reliable instruction in regard to the best methods of preparing and administering the Nitrous Oxide Gas.

The Physician's Visiting List for 1867. Philadelphia: Lindsay & Blakiston.

This very great convenience for the practitioner has been so long and so generally in use by the profession, that its merits are well known. For sale by W. B. Keen & Co., 148 Lake Street. Prices—For accommodating 25 patients, in cloth, 75 cents, in leather, $1.25; for 50 patients, in cloth, $1.00, in leather, $1.50.

Manual of Materia Medica and Therapeutics: Being an Abridgement of the late Dr. Pereira's Elements of Materia Medica, Arranged in Conformity with the British Pharmacopœia, and Adapted to the Use of Medical Practitioners, Chemists and Druggists, Medical and Pharmaceutical Students, etc. By Frederic J. Farre, M.D., Cantab., F.L.S., Fellow of the Royal College of Physicians of London, Honorary Member of the Pharmaceutical Society of Great Britain, Examiner in Materia Medica and Pharmacy to the University of London, etc., etc. Assisted by Robert Bentley, M.R.C.S., F.L.S., Honorary Fellow of Kings College, London, Prof. of Botany, etc., etc.; and by Robert Warington, F.R.S., F.C.S., Chemical Operator to the Society of Apothecaries, and Vice-President of the Chemical Society. Edited, with numerous references to the U.S. Pharmacopœia, and many other additions, by Horatio C. Wood, Jr., M.D., Prof. of Botany, University of Pennsylvania, Auxiliary Faculty of Medicine; Member of the American Phil. Society, etc., etc., etc., etc. With 236 wood engravings. Philadelphia: Henry C. Lea. 1866.

This, though an abridgement of Dr. Pereira's original work, is, nevertheless, a ponderous volume of 1030 pages. It is published in good style, in substantial leather binding. The four editors and assistant editors, British and American, have so altered, abridged, and modified the original work, that we doubt whether, if Dr. Pereira were alive, he would recognize much in the present edition as his own work. It is, however, a convenient and very valuable treatise on materia medica.

For sale by W. B. Keen & Co., 148 Lake Street.

Editorial.

Clinical Instruction in Chicago.—When the writer came to this city, in the autumn of 1849, there was nothing bearing the name of a hospital in it; and the clinical instruction was limited to one or two college clinics per week, during the annual lecture term of sixteen weeks. The following summer, he aided in the procurement of *twelve* beds, in a building rented temporarily, for the beginning of a public hospital, and in the autumn of 1850, commenced the work of hospital clinical instruction. This constituted the beginning of what has since been known as Mercy Hospital, and which has been increased until it now holds permanent possession of one of the finest buildings and locations in the city. It is constantly well filled with patients, under the immediate care of the Sisters of Mercy, with the professors of Practical Medicine and Surgery in the Chicago Medical College as its medical and surgical attendants. Its wards are open for clinical instruction four days in the week, during nine months of each year, *viz.*:—from the first Monday in October, to the first Monday in July. The full clinical course in this hospital constitutes an essential part of the curriculum of the Chicago Medical College.

In addition to this, Chicago now affords clinical instruction, two days in each week, in the United States Marine Hospital, by Dr. R. N. Isham, Prof. of Surgical Anatomy and Operations of Surgery, in the Chicago Medical College; two days in each week, in the Cook Co. Almshouse Hospital, by Dr. J. P. Ross, one of the attending physicians, and Dr. G. K. Amerman, one of the attending surgeons, and in the eye and ear ward, once a week, by Dr. Hildreth, the attending surgeon in that department; and one day in each week, in St. Luke's Hospital, by the attending surgeon, Dr. Owens. Both the colleges also maintain two clinics per week, on patients from their respective dispensaries. We have made this enumeration, simply to remind the students and profession in the North-west, that in no city East,

West, or South, can the student find better advantages for true bedside clinical instruction than here in Chicago.

MORTALITY FOR THE MONTH OF AUGUST.—

CAUSES OF DEATH.

Accidents,	11	Fever, Typhus,	1
Bronchitis,	1	Fever, not stated,	3
Burned,	3	Fever, Childbed,	2
Cancer,	3	Hydrocephelus,	6
Childbed,	5	Inflammation of Kidneys,	1
Cholera,	139	Inflammation of Brain,	16
Cholera-Morbus,	15	Inflammation of Bowels,	15
Cholera Infantum,	25	Inflammation of Lungs,	13
Colic,	1	Inflammation of Pleura,	1
Congestion of Brain,	5	Killed,	1
Congestion of Lungs,	3	Measles,	47
Consumption,	33	Old Age,	15
Convulsions,	37	Paralysis,	1
Cramp,	9	Pneumonia,	3
Disease of Brain,	3	Rheumatism,	2
Disease of Heart,	2	Scrofula,	1
Disease of Liver,	5	Small-Pox,	1
Disease of Spine,	2	Stillborn,	11
Delirium Tremens,	2	Summer Complaint,	217
Decline,	3	Suicide,	2
Dropsy,	12	Teething,	37
Diarrhœa,	38	Tuberculosis,	1
Diphtheria,	7	Whooping-Cough,	63
Dysentery,	29	Worms,	1
Erysipelas,	1	Unknown,	31
Fever, Remittent,	19		
Fever, Scarlet,	17	Total,	940
Fever, Typhoid,	14		

AGES OF THE DECEASED.—Under 5 years, 578; over 5 and under 10 years, 46; over 10 and under 20, 34; over 20 and under 30, 78; over 30 and under 40, 78; over 40 and under 50, 48; over 50 and under 60, 27; over 60 and under 70, 25; over 70 and under 80, 7; over 80 and under 90, 2; over 100, 1; unknown, 16. Total, 940.

NATIVITIES.

Chicago,	548	France,	4	Sweden,	9
Other States,	127	Holland,	3	Unknown,	2
Canada,	9	Ireland,	69		
Denmark,	6	Norway,	28	Total,	940
England,	12	Bohemia,	10		
Germany,	98	Scotland,	4		

DIVISIONS.

North,	252	South,	297
County, (out of city),	3	Unknown,	12
West,	386		
Total,	940		

Number of deaths in July,	706
Increase,	234
Number of deaths August, 1865,	466
Increase,	474

REPORT OF THE COMMITTEE ON THE SANITARY CONDITION OF THE CITY, AND THE PREVALENCE OF DISEASES, DURING THE MONTH OF JULY, 1866.

By N. S. DAVIS, M.D., of Chicago.

Read before the Chicago Medical Society, August, 1866.

Atmospheric Conditions.—During the first seven days of July, the winds were from the south and south-west; the temperature high; more or less rain every day, except the 4th and 5th; atmosphere excessively damp and deficient in electricity, inducing in the animal system a feeling of languor and oppression. The only change during these seven days, was on the evening of the 2d, when the wind suddenly changed to the north-west, bringing a cooler atmosphere during the night, but which was again reversed in the morning. On the 8th, the wind had changed to the north-east, and the atmosphere continued chilly and damp through the day. 9th, wind from the north, and, atmosphere still cold, clear, and less damp. 10th and 11th, wind south-east; atmosphere warm, but clear, dry, and pleasant. From the morning of the 12th, to the evening of the 17th, the wind was from the south and south-west; the atmosphere continuously hot, damp, and deficient in free electricity, inducing a marked feeling of oppression and weakness. About 1 o'clock P.M., of the 17th, the wind suddenly changed to the north-east, bringing a cool, damp atmosphere, and a slight sprinkle of rain; and in the evening, copious showers, with thunder and lightning. During the 18th, 19th, and 20th, the wind continued north and north-east, with a cool, clear, but somewhat damp atmosphere. During the evening of the 20th, it became cloudy, with the wind more to the south. 21st, wind south, cloudy, hot, and oppressive, with copious showers in the evening, followed by a cool north-east wind, and a fine display of atmospheric electricity. About midnight, the wind again changed to the south, and the morning of the 22d was hot, rainy and oppressive. The 23d, 24th, 25th, only moderately warm, and wind mostly east and north-east, but showers occurred every

day or night, keeping the air saturated with dampness. The 26th, 27th, and 28th, the wind was almost continuously from the south; the atmosphere filled with clouds, mist, and sometimes rain, and very hot. During the night of the 28th, the wind changed to the north, and the 29th 30th, and 31st were cool, for the most part clear and pleasant.

It will thus be seen, that the most prominent meteorological characteristics of July were, high temperature; frequent rains; excessive dampness; south and south-west winds, with deficient free atmospheric electricity. The principal exceptions to this rule were from the 17th to the 21st, and from the 29th to the 31st. The average temperature of the month was here, as in most other sections of our county, above the average of the preceding ten years. I have been particular to mention the direction of the winds, because those from the south, south-west, and west come over an almost continuous rich, alluvial prairie surface, and in the summer always bring an atmosphere not only elevated in temperature, but deficient in both electricity and ozone. Its effects upon the human system are popularly expressed by the words, *relaxing, sultry, oppressive.* Those from the east, north-east, and north, sweep over an equally continuous surface of fresh, pure water, extending 40 miles east and hundreds of miles north; and in summer never fail to bring a cool, invigorating, though often damp atmosphere.

In regard to local sanitary conditions, it is proper to state that, although the scavenger system adopted by the city authorities has served to keep the streets and alleys of the central part of the city some cleaner than in former years, yet up to the last day of July there were extensive sections of the city, thickly covered with dwellings, in which not even a street gutter had been cleaned out; and both branches of the Chicago River have been in their usually offensive condition. As might have been anticipated, from the local and atmospheric conditions just detailed, the prevalence of intestinal diseases in the city, during the month of July, has been much above the average of the preceding three or four years.

In a preceding report, it was stated that from the 20th to

the 27th of June there was a prevalence of south winds, with a hot, damp, and oppressive atmosphere, during which, "serous diarrhœa and dysentery increased rapidly among young children, and to some extent among adults." The cool invigorating atmosphere of the last three days of June checked this tendency in some degree, but the renewal of the hot, damp, and showery weather, during all the first seven days of July, again increased rapidly the number of attacks of cholera-morbus, cholera infantum, diarrhœa, and dysentery. During the 6th and 7th, particularly, the attacks of bowel-affections were not only numerous, but they were accompanied by unusual languor, prostration, and sweating. The days were hot, cloudy, with some rain, and slight wind from the south. Two cases of sunstroke were reported on the 7th.

On the night of the 6th and morning of the 7th, I saw three or four children presenting symptoms of great prostration; countenances pale; pulse slow and weak; respiration slow and inefficient; mental faculties dull or in a state of semi-sleep, from which it was difficult to arouse them; occasional sighing and momentary restlessness; but with little or no evacuations of any kind. Their paleness and apparent lifelessness was the chief cause of alarm to the parents and friends. I have noticed a few similar cases during the first extremely hot days and nights of almost every summer. They appear to be the result of a deficiency of atmospheric oxygen and electricity, coupled with the relaxing influence of a high temperature. During the 8th, 9th, 10th, the number of new attacks of bowel-affections was decidedly less, and most of those that did occur, presented the form of dysentery. But from the 11th to the 17th, the cases of serous diarrhœa and cholera-morbus, especially among children, increased so rapidly that two-thirds of all the patients that came under my observation during that period were of this class.

Among my daily entries in the note book, is the following: "During the night of the 16th, the air was very hot and relaxing. Both that and the preceding night, children with bowel-complaints became very restless and prostrate, with discharges

thin as water. Several were taken suddenly prostrate, drowsy, and feverish, without any discharges." Other periods of rapid increase of new attacks took place during the 21st and 22d, and from the 26th to the 28th, inclusive. According to my notes, four-fifths of the cases of serous diarrhœa and cholera-morbus that occurred during the whole month, had their *commencement* either between the 1st and 7th; the 11th and 17th; 21st and 22d; or the 26th and 28th, while the cases of dysentery occurred more evenly throughout the month. If these dates are compared with the detail of atmospheric conditions, it will be seen that a hot and damp atmosphere invariably accompanied the unusually rapid multiplication of cases of serous diarrhœa and cholera-morbus. Are these atmospheric conditions, coupled with the idio-miasmatic influences generally present in densely populated cities, capable of causing attacks of genuine spasmodic cholera? As bearing on this question, I will simply relate the following facts:—

On the night of the 7th of July, one of the most oppressive that occurred during the month, a lady living at 160 Western Avenue, on the extreme western limits of the city, began to have disturbance of the bowels with serous discharges, which culminated in severe cholera symptoms on the night of the 8th, including the characteristic rice-water discharges, by vomiting and purging; severe cramps in the muscles of the extremities and abdomen; a small, weak pulse; skin shrivelled and cool; voice husky, etc. Under appropriate treatment she recovered.

Case II. On the morning of the 10th, was called to Mr. L., at 200 Huron Street, in the North Division of the city. He was then presenting all the symptoms of the active stage of spasmodic cholera, but which had been preceded by moderate diarrhœa since the evening of the 7th.

Case III. On the morning of the 11th, a lady from Kansas arrived at the Adams House. She had been much fatigued by the long journey, and had suffered from a moderate diarrhœa during the three preceding days. Soon after her arrival, the diarrhœa began rapidly to increase, and at noon, she was presenting every symptom of severe cholera. The discharges up

and down were copious, rice-water in appearance, and accompanied by severe muscular cramps in the extremities. Two hours later, when I first saw her, the eyes were deeply sunken; the extremities cold and skin shrunken; the pulse extremely weak; the voice reduced to a whisper; the cramps severe; and the intestinal discharges wholly involuntary. Under treatment, the discharges ceased, reaction took place slowly, and the patient ultimately recovered.

Case IV. A man, aged about 20, baker by occupation, residing at 172 West Lake Street, was attacked suddenly, during the afternoon of the 12th. The cholera symptoms were strongly marked and violent in every respect. I saw him about two hours after the commencement of the attack. His system responded promptly to the action of medicine, and he recovered. The day was excessively hot, and the man had indulged in drinking eight or ten glasses of beer, and two or three of brandy, besides a considerable quantity of water.

Case V. Mr. K., aged about 55 years, long in infirm health, was attacked with violent symptoms of cholera on the night of the 6th. When I saw him, on the 7th, he was in collapse. Partial reaction took place, and he lingered until the 10th, when he died. He resided on the corner of West Indiana and Sangamon Streets.

Case VI. Mr. W., aged about 45 years, residing at 245 Madison Street, was attacked on the night of the 15th. Early in the morning of the 16th, I found him presenting all the symptoms of the active stage of genuine cholera. But he responded to the action of remedies and recovered.

Case VII. Mr. D., aged 35 years, intemperate habits, residing on Franklin Street, near Jackson, was attacked on the night of the 15th. When I saw him, early in the morning of the 16th, he appeared to be in the commencement of collapse. Reaction, however, took place; he lingered several days with symptoms of secondary fever, but finally recovered.

Cases VIII., IX., X. On the morning of the 22d, I was called in quick succession to three cases of adults, who had been suddenly attacked during the latter part of the night pre-

vious with vomiting, purging, cramps, etc. They were seen during the early part of the active stage, and readily yielded to treatment.

Such were the indications of cholera in this city during the month of July, as they came under my own observation. The cases were not reported to the Health-Officer, because they were sporadic, having no connection with each other or with any importation from other places, and because they gave no evidence of being either contagious or infectious. But if these cases originated from atmospheric and local causes, why may not a more active development of the same causes give rise to the same disease in its more malignant and epidemic form? The only difference I could detect between these sporadic cases and cases of cholera in the midst of an epidemic, consisted in less depression of vital susceptibility, and a consequent more prompt response to the action of medicines.

That the month of July was attended by a much greater proportion of bowel-affections than usual, is apparent from the very great increase of mortality during that month. The whole number of deaths for June was 319, and for July 706; the excess in the latter month being almost wholly from bowel-affections.

The Cholera Cases in this City During the Month of September, 1866.—The subjoined report of the Health-Officer, gives the number of deaths from cholera, in this city, during the past month, showing the number for each ward, their nativity, and ages:—

Nativity.—United States, 33; Bohemia, 9; Canada, 2; Denmark, 2; England, 6; France, 2; Germany, 110; Holland, 1; Ireland, 66; Norway, 19; Poland, 1; Sweden, 5; Switzerland, 2; Spain, 1; Scotland, 1; Italy, 1; unknown, 11. Total, 272.

Wards.—First Ward, 20; Second Ward, 21; Third Ward, 19; Fourth Ward, 16; Fifth Ward, 9; Sixth Ward, 15; Seventh Ward, 21; Eighth Ward, 8; Ninth Ward, 5; Tenth Ward, 5; Eleventh Ward, 19; Twelfth Ward, 37; Thirteenth Ward, 3; Fourteenth Ward, 35; Fifteenth Ward, 20; Sixteenth Ward, 14; unknown, 2. Total, 272.

Ages.—Under 5 years, 15; over 5 and under 10 years, 22; over 10 and under 20, 15; over 20 and under 30, 64; over 30 and under 40, 74; over 40 and under 50, 40; over 50 and under 60, 23; over 60 and under 70, 7; over 70 and under 80, 1. Total, 272.

Chicago Medical College.—The Eighth Annual Course of instruction in this Institution commenced on Monday evening, Oct. 1st. The exercises commenced with prayer by the Rev. Dr. Goodspeed. The general introductory lecture was given by Prof. M. O. Heydock, and was an elegantly written address. The lecture-room was well filled with an attentive and interested audience. After the lecture, the museum, library, and other rooms were thrown open for the inspection of the visitors. Every part of the edifice was in excellent order, and supplied with everything that could contribute to the convenience and progress of the student. The number of students present was much larger than at the commencement of any previous term since the college was organized.

Disinfection and Deodorization.—Dr. Herbert Barker, the successful competitor for the Hastings Prize Essay for 1865, was led, by a series of observations and experiments on this subject, to the following conclusions:—

1. For the sick-room, free ventilation, when it can be secured, together with an even temperature, is all that can be required.
2. For rapid deodorization and disinfection, chlorine is the most effective known.
3. For steady and continuous effect, ozone is the best agent known.
4. In the absence of ozone, iodine, exposed in the solid form to the air, is the best.
5. For the deodorization and disinfection of fluid and semi-fluid substances undergoing decomposition, iodine is best.
6. For the deodorization and disinfection of solid bodies that cannot be destroyed, a mixture of powdered chloride of zinc, or powdered sulphate of zinc with sawdust, is best. After this, a mixture of carbolic acid and sawdust ranks next in order, and following on that, wood-ashes.
7. For the deodorization and disinfection of infected articles of clothing, etc., exposure to heat at 212° Fahr. is the only true method.
8. For the deodorization and disinfection of substances that may be destroyed, heat to destruction is the true method.—*Journal of Chemistry.*

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OF CINCINNATI.

ANNOUNCEMENT FOR SESSION OF 1866-7.

The next Regular Session begins Oct. 15th, 1866, and will close March 1st, 1867. There will be Preliminary Lectures and Clinics at the Commercial Hospital, from and after Oct. 1st. The next Course of Lectures will be given at the new College, on Twelfth Street, betweon Elm and Plum.

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B. I. RICHARDSON, M.D., Professor of Diseases of Women and Children.

JOHN A. MURPHY, M.D., Professor of Practice of Medicine.

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N. S. DAVIS, M.D., Editor.

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Original Contributions.

ARTICLE XXXVIII.

REPORT ON CEREBRO-SPINAL MENINGITIS.

By J. S. JEWELL, M.D., Prof. Anatomy, Chicago Medical College, etc.

[CONCLUDED.]

From this summary, which is made up from the facts collected from various authentic sources, it will be perceived that the diseases just considered are *not* identical, but they really present wide differences, such as can leave no doubt of their *non*-identity. This parallel requires no discussion to evolve its teachings. While I have no doubt that cerebro-spinal meningitis may have imparted to it peculiar hues, so to speak, or tendencies, by the typhus, malarial, or erysipelatous "constitutions," or may be complicated with pneumonia or other special forms of disease, I feel I am warranted in concluding this to be a disease *sui generis*, and not a mere form of typhus, as it has been assumed to be.

If it has been shown that cerebro-spinal meningitis and typhus are not identical, it will hardly be worth while to show that the opinions above referred to, as to its identity with other forms of disease, have no sufficient foundation in fact.

In the third place, the evidence does not show that it is contagious. So far as the vast *majority* of cases are concerned, they are clearly not contagious in their origin. A large number of cases, however, are detailed by Hirsh, Boudin, Rum-

MEL, and others, which *seem* to show the disease is contagious. I will not here give the particular testimony on which its contagiousness is affirmed, but will remark on that evidence, that in diseases like the present, where comparatively only a few cases have occurred which favor the idea of contagion, we may well scrutinize them closely, before we admit them.

In diseases like small-pox, *e.g.*, when, at least in the majority of cases, we can show exposure to contagious influence clearly to have *preceded* the occurrence of the disease, and in which we can clearly communicate the disease by contact or inoculation, and in which it presents a series of distinct stages and is self-limited, I say in *such* cases, there can be no doubt. But it is not so in this disease. If we *admit* contagion, it is clear the majority of cases do not occur from it, but under circumstances forbidding such a conclusion. Indeed, there is, perhaps, not a single law of contagion to which it conforms only in seeming, while it *does* conform to the general facts or laws of epidemic influence.

In determining the action of contagion in such a case as this, it can only be done on the observed order of sequence. To be valid, it should be shown in the majority of cases. But here, on the contrary, comparatively only a few have been observed. In the majority of cases, no such order has been observed or has existed. Besides, in those cases in which it *has* seemed to operate it has not been shown that such cases were not among people who were living under the operation of the same cause or causes, which, producing disease in *one*, really (as seems most probable) produced the same disease in due time in others. The evidence which has been offered in support of the belief in contagion, can only yield that support by a palpable *petitio principii*. On the whole, the evidence seems to me not to support the question of contagion.

Is the disease infectious? Most authors decide, or seem inclined to decide, it is. There has always seemed to me more than the usual looseness with which medical terms are employed, in the use of the terms "contagion" and "infection." I will state what I understand these terms to mean:—

By *contagion*, I understand such a positive cause of disease as, emanating from a sick person, may be communicated *through the air*, to *another* person, so as to produce in such person the same form of disease. As a good example, I would mention small-pox.

By *infection*, I mean a positive cause of disease, such as may be communicated from a person diseased, by *contact*, to another person not diseased, and which is capable when thus communicated, as in the case of contagion, of producing or reproducing the same form of disease which was the occasion of it. As examples, I would mention syphilis, hydrophobia, etc., diseases which are *not known* to be communicated through the air or by contagion, but *are* known to be communicated by contact.

But some diseases are both contagious and infectious, as small-pox, erysipelas, and, *probably*, typhus. I would call those diseases contagious only which are clearly capable of affecting persons through the medium of the air, in the way already mentioned. Those infectious only which are capable of being propagated in the way mentioned above. Such diseases as have their *causes* communicated by contact, and in this way are propagated, as in scabies or porrigo, rather than the *products* of diseased action, as in small-pox, hydrophobia, syphilis, etc., *might* or might *not* be called infectious, according to one's pleasure. If this be a correct definition of infection, I must say there is no evidence worthy of note that the disease is infectious.

Having, in some measure, seen what the disease is *not*, let us now turn to the direct and important question:—What does the evidence teach us the disease *is?* What is its *seat*, its *nature?* These questions will be found difficult as they are important.

Having concluded the essential cause is external, it now becomes us, in view of its nature, to trace its effects as observed in the blood and textures of the body, and, as near as possible, the *order* in which they appear, and, if *possible*, *how* the phenomena are produced. It will be admitted that the cause, whatsoever it is, must first enter the blood. Here, the blood may serve simply the purpose of a vehicle, conveying the poi-

son to the parts on which it acts; or the blood may form the *nidus* for the development of the poison in quantity sufficient to produce its visible effects, as in small-pox or hydrophobia, probably; or the poison (if we may so call it for the time) may initiate a series of changes in the blood which, in their turn, become the cause of the observed phenomena. Some of the facts already given will be called up in the statements which follow, but for a different purpose than before. This statement will, I hope, save me from the charge of thoughtless repetition.

That the poison, whatsoever it may be, *sometimes* acts directly on the nervous system, seems to be matter of fact. It must be distinctly remembered that the question is not whether there *are* changes in the blood, but whether those changes become the cause or causes of the symptoms and appearances presented in this disease.

Now, though we are not able to say positively, *no* blood-changes have occurred sufficient to account for the disease, its sudden attack, or speedy fatal results, yet, on the other hand, our *experience* in regard to blood-changes in other diseased states is opposed to a belief that death is due to changes in the blood, rather than to a poison suddenly introduced into, or developed in the blood, though independent of it. Our *experience* (and this is all we can rely on here) makes it easier for us to believe the latter than the former. There are many obvious instances where known poisons have been introduced into the blood and have caused death in as short a time, in a way not very dissimilar, and which have left behind no greater traces of their action than some of the reported cases have of sudden death in this disease. It is difficult, with our present experience, to imagine blood-changes so grave take place in a time so *short* as the suddenness of the attack requires they often should. I find it difficult, if not impossible, to resist the conviction that some energetic poison *has been* introduced into the blood and has acted directly on the nervous system, sufficiently concentrated or violent, in some cases, to destroy life speedily, by destroying the energy or power of the organic nervous system, striking thus at the very fountain of life; or, without acting in this

marked manner, initiating a series of changes in the blood and tissues, which, in process of time, and according to circumstances, may result in death or recovery. I am reminded very much of the action of hydrocyanic acid, strychnia, morphia, etc., when I witness or consider such cases.

As already remarked, we do not *know* there have been no changes in the blood sufficient to account for the phenomena of this disease, but what we *do* know does not render such probable. But whatsoever uncertainty there may be about this, the evidence goes to show the nervous system as earliest and most profoundly affected, both sympathetic and cerebro-spinal, especially the former, and the symptoms are, in great measure, confirmed by the *post mortem* appearances.

The sudden and invariable reduction of temperature, and the change in the character of the pulse, always indicative of a loss of energy or power, and perhaps other symptoms, point at once to the organic nervous system as the part primarily affected, so far as the *earliest symptoms show*. We know enough of the power and influence of this nervous system in the organic processes or actions of the body, and especially those comprehended under the title of nutrition, not to be surprised that any grave affection *it* should experience would be attested, or followed in due season, by such marked phenomena as even *this* disease presents.

After a careful consideration of the phenomena, the conclusion arrived at seems to me most in accordance with them, *viz.:* The organic nervous system (and, probably, at the same time the cerebro-spinal) is acted on in various degrees by some subtle epidemic cause, unknown save in its effects, which directly impairs its energy, and, through it, probably initiates those changes in the blood and textures to which many of the symptoms during life and appearances after death are due.

Whether the blood is primarily affected, other changes following as consequences, is true or not, we have seen that changes of a marked character do occur, and that they are, probably, not due to retained excretory matter, or to a deprivation of some of its appropriate elements, we have already seen. During life, the blood is characterized by unusually

bright color, by firm coagulation, by large clot, often by a buffy coat, and by an increase of fibrine and corpuscles; after death, by fluidity and dark color, though not always the former.

As regards the fibrine, in whatsoever way we account for its increase, or whatsover effects we may attribute to it, it seems probable it is owing to its excess we have the remarkable tendency to plastic exudation on the surface of the brain and spinal cord, where time has been afforded for it to occur. One reason *why* this effusion takes place so freely on this surface seems to be, that it is so surpassingly rich in vessels, on the one hand, and that they are *so superficial*, on the other hand. Whether the fibrine plays any other important part than this, seems mainly matter of conjecture.

As regards the red corpuscles, whether it is negative, as by a failure to disintegrate, or positive, as by reason of increased production, and as to what share they may have in producing the phenomena of the disease, in relation to all such points we have no very definite information.

Albumen, as we have seen, has been found in the urine in many cases, especially in the later stages or during convalescence. But the absence of dropsies, except to a limited extent, and of all the symptoms usually connected with the blood impoverished of its albumen, would lead one not to lay much stress on *this* feature. Whether the salts are less in quantity than normal in the blood the facts do not show.

It will be remarked of these blood-changes, so far as they have been matter of observation, they have been witnessed only after several days of the disease have passed.

That in cases which have had some duration, the blood after death is darker and more fluid than it is customary to find it, may be significant. But these same conditions, so far as we can tell, exist, on the average, in a more perfect degree in forms of disease widely different from this, and, besides, as we have seen, they do not obtain in all cases. It must be remembered, the blood during life does not show anything of such a state, but the contrary. It is no uncommon thing, in fact, to find a similar state of the blood in cases where death has occurred from violent diseases.

The view I should be inclined to take of the blood in this disease, is, that whatsoever changes appear in it constitute simply a part, and a very important part, of the disease, and that these changes are probably subsequent, in order of time, to the affection of the organic nervous system. The diseased states of the blood may, and probably *do*, have an important causative relation to some of the later phenomena of the disease.

If we take all the leading phenomena of the disease, from beginning to end, and regard simply the direction they point, it will be readily seen they point almost unanimously to the nervous system. The chilliness, the state of the pulse, the sympathetic vomiting, the mental disturbance, the disturbance of general and special sensibility and of motion, all such symptoms point to the nervous system as the *characteristic seat* of the disease.

Having thus reviewed the symptoms and blood appearances, and having, in some degree, ascertained the truths to which they seem to point, let us now turn to the pathological appearances and interrogate *them*, and find if their teachings correspond to those the symptoms have apparently afforded.

When we consider the *post mortem* appearances, we find, excepting those found within the cerebro-spinal cavity, none sufficiently constant to be considered as properly belonging to the disease. They are simply incidental, or throw no light on the disease not already given in those observed in the cerebro-spinal cavity. This being admitted, and the blood appearances having already been considered, our attention will be confined to the central nervous system and its envelopes.

As regards the contents of this cavity, they have never been found wholly free from at least some evidence of disease. The most constant, the uniform morbid appearance, has been congestion.

As regards exudations, they always seem to be present, where time has been given for them to appear in noticeable quantity. But before we consider the character of the effusion, let us see clearly where the *post mortem* appearances occur.

The *dura mater* is probably always either congested or has

abnormal fulness of its sinuses. It is almost never structurally diseased or exhibits in a noticeable degree a plastic effusion.

The *arachnoid* is also very seldom diseased, especially on its outer surface. It is many times somewhat discolored, roughened, and thickened as we should expect a delicate membrane like this to be, bathed on one surface in exuded matter. It is *very seldom* structurally diseased. Those who will remember how sparsely this membrane is supplied with vessels and nerves will not be much surprised at this. The contents of its cavity seldom present marked evidences of disease.

But when we turn to the pia mater, the case is changed. It is *never* free from some evidence of disease, and in almost all cases evidence the most indubitable, such as marked effusion, plastic and otherwise; if not *this*, congestion. The effusion, in such places and to such extent as has been already indicated in the *post mortem* history. Now, this effusion is almost uniformly spoken of as occurring on the serous surfaces of the body, for which the disease is believed to have a decided preference, especially the serous surface within the cerebro-spinal cavity. But it so happens, as regards the latter, that it almost never is the seat of the disease. The *only* part constantly diseased is the pia mater, which is not a *serous* membrane any more than the periosteum is.

It will be remembered that this membrane is simply a fibrous investment for the brain and spinal cord, being thickest on the latter. It forms not only an investment for the brain and cord, but a trellis or framework, so to speak, in the meshes of which the arteries destines to enter the cerebral substance ramify and subdivide to the requisite degree of fineness. It is *fibro-vascular*, and *not* serous. Its extreme richness in bloodvessels, and their *superficial character*, will probably, in some measure, explain why this membrane is so often the seat of disease, and why the effusion occurs on it in such abundance. Something may be due to the fact, that the cerebral circulation occurs in an unyielding airtight case, in this respect being different from the circulation elsewhere, save in the bones, perhaps. I have long thought the conclusions reached by Dr. BURROWS, regard-

ing the cerebral circulation, were not altogether sound, and that the fact should be held as important that the cerebral circulation takes place under the conditions it does. In this connexion, I merely suggest this as a matter to be thought of in explaining, or seeking to explain, the phenomena of the disease now under consideration.

Another fact is worthy of note, that the effusion is most abundant on those parts most vascular, as on the under surface of the brain, where the pia mater covers the under surface of the great ganglia which are richly supplied with vessels.

But why the *cause* exerts its influence *here* so constantly, can only be explained when we are able to explain why opium acts on the brain, strychnia on the spinal cord, one medicine on this part, and another on that. Whatsoever peculiar effects such medicines produce, they stand to such effects in the relation of cause, it is almost superfluous to say. In this disease we have certain *effects;* whatsoever the essential cause may be, they are, in the main, *its* peculiar effects. It is no more difficult for us see how the supposed cause of this disease shall produce its characteristic effects, than for us to explain to ourselves why the medicines named should act as they do, rather than some other way or place.

It now becomes a question, whether this supposed cause acts on the brain and spinal cord directly or indirectly. I am prepared to admit its direct action on the brain and spinal cord. But whether this be true or not, I deem it possible to show, as highly probable, that the results which appear within the cerebro-spinal cavity are due, in no small degree, to the state of the organic nervous system. I will shortly return to this topic.

In cases where effusion has occurred to any considerable extent it is not difficult to account for the coma and many of the other symptoms, more especially when the brain and spinal cord are substantially diseased, as they often are. The derangements of the nutrition and of structure, the pressure, and the like would be considered sufficient causes for death without the direct effect of the supposed poison.

As regards the character of the effusion, generally speaking,

it resembles what we find in other congestions and inflammations so closely, that no difference except in degree is to be perceived. The exuded matter has in many epidemics appeared purulent in a marked degree, as, indeed, we would occasionally expect it to be in any epidemic. Though this purulent character is more common in this disease than other forms of inflammation of the same parts, yet it is by no means *peculiar* to this disease. The most that can be said is, that the disease shows a more decided tendency to the exudation or formation of pus than ordinary. This will be an interesting point to bear in mind in the therapeutical management of the disease.

There are several points which have been established, with various degrees of certainty, by recent anatomical and physiological investigations, which, if held in view, will assist us in understanding or interpreting the phenomena of diseases affecting the nervous system. Among them may be mentioned, that it is pretty well established that the cerebrum or the gray matter on its surface is the seat of those automatic actions such as we become *conscious* of *willing*, called *volitions*, and also that part of the brain immediately concerned in intellection, and to be the part wherein we become conscious of sensory impressions. All sensations, as such, are recognized here; all volitions, as such, originate here. Beneath this great primary centre, and subordinate to, and partly imbedded in it, are certain other centres, such as the corpora striata, which are probably the centres to which all *voluntary* impulses converge from the surface of the hemispheres, previous to their distribution to the voluntary muscular system; the thalami optici, to which converge, probably, all *general sensory* impressions, previous to being transmitted to the cerebral hemispheres for recognition; and the cerebellum, which has, probably, as its chief function, the coördination of the voluntary muscular movements. About these *latter*, are massed the various centres for the special senses. I say, by bearing such facts in mind, we will not be surprised to find derangements, in various degrees, of the functions those parts seem destined to perform, when we find, as we do in *post mortem* examinations, they are so frequently dis-

eased, or find evidence of disease in their immediate vicinity. By remembering such facts, we are many times able to connect *post mortem* appearances with the symptoms of the disease, or, conversely, to determine, with more or less certainty, from the symptoms, the situation and extent of the pathological changes going on during life, a very desirable thing to accomplish when possible.

But, returning from this digression, let us now recur to the question, as to what share the state of the organic nervous system has in producing the diseased or abnormal condition of the circulation, and the consequences which flow from it, as regards the cerebro-spinal axis.

This cannot well be shown, without a reference to certain facts and experiments, and to certain views which I think the facts warrant, which, though it may be a digression, they are, however, of sufficient importance to justify their introduction in this place. Neither the facts nor the views can be said to be new, but their importance has never been sufficiently recognized, so far as I know.

* At one end of the elastic arterial tube is a powerful muscular appartus, the heart, by which this elastic tube is kept constantly distended, and which communicates, in that class of animals possessed of it, the original impulse to the blood. Part of the force exerted by the heart is expended in setting the blood in motion; part, in opposing the elasticity of the arteries, by which latter the force so expended is *conserved*, and in the interval between one ventricular contraction and the next which succeeds it, is expended mainly in reacting on the contained column of blood. In obedience to this force, the blood being prevented from returning toward the heart, is forced onward steadily toward the distal end of the artery. By the time the blood has reached the distal end of the artery, its momentum has become so much diminished by friction and the like that it could probably not be circulated through the numberless small, winding capillary passages, were it not for some

* These same views are more fully presented in a paper to be found in the August No. of the *Chicago Medical Examiner.*

arrangement, either at the distal end of the arteries or in the capillaries, for communicating a new impulse to the blood which has just entered, or is about to enter, the capillaries. But the capillaries have been shown not to be muscular. They have very thin and delicate walls, just sufficient, apparently, to separate the blood within from the tissue without the vessel. If *anywhere*, the muscular structure for communicating this new impulse to the blood must be nearer the heart. Now, it has been demonstrated that the small arteries or arterioles have muscular walls. Manifestly, this is not the place to refer to all the experiments which have been or may be made to prove this fact; but I will refer to one or two:—

The brothers WEBER found, upon drawing out the mesentery of a frog and placing it under the microscope, if they transmitted through one of the small arteries a galvanic current, it immediately contracted, and by continuing the current, the artery would diminish in size *very much;* but if the current was too *powerful*, or too *long-continued*, the artery ceased to contract, and continued to dilate until much greater than the natural size—the muscular tissue, in the last case, losing its power to contract on the application of appropriate stimuli. The same phenomena may be observed, even more strikingly, in the wing of the bat, with the additional advantage that it is a warm-blooded animal.

We will, then, admit the muscularity of the small arteries, and that they readily contract on the application of stimuli, as other muscular organs do, and that this muscular tissue may be paralyzed from excessive stimulation, or from the want of it.

Another question now arises, whether these small arteries, like other muscular organs, from which they differ essentially only in size, are supplied by nerves. They are, as has been and can be demonstrated, and especially do these small arteries receive twigs from the organic nervous system.

Now, are there any circumstances known, by which we can know the muscular coat of these vessels to act under a stimulus from this nervous system. If we reason from analogy, they do. When we take a swallow of water or a morsel of food into the

esophagus, for example, it immediately excites, by reflex action through some of the neighboring ganglia of the sympathetic system, contraction of the esophagus, by which the fluid is propelled along in a certain direction.

The only difference worthy of notice in the two cases seems to be that of size. You have in both cases a muscular tube supplied by twigs from the organic nervous system and a fluid, filling it rythmically, or with an impulse. How can we refuse to admit contraction in the one case, when it is plain it occurs in the *other* case? If this muscular apparatus is not here for some such purpose as this, what purpose does it fulfil? We will admit it is here for the purpose of contraction, and that it does contract rythmically, that it does so for a purpose, and that the purpose is that the blood may be propelled into, or even through, the capillaries which have no such coat, and, therefore, no such power. I will now mention one experiment, which seems to show these vessels are really under the control of the organic nervous system:—

If the sympathetic nerve be divided on one side, in the neck of a rabbit, immediately afterwards the small arteries in the conjunctiva and in the ear are seen to become dilated, congestion, in fact, results, just as we would suppose it would, by removing from the vessels the regular or rythmical supply of motor stimulus, by dividing the nerve leading to them, by which the exciting power transmitted, on which the contraction of the vessels depends. We will then admit the small arteries contract rythmically under an influence afforded by the organic nervous system. If this is true, it follows if this nerve stimulus, for any reason, should be supplied in great excess, in the same proportion would these small arteries contract beyond what is normal; or if, on the contrary, we suppose this stimulus for any reason is withdrawn, either partially or wholly, from the vessels of any part, the effect would be their paralysis with consequent relaxation and distension or *congestion*. In so far, then, as the assistance of these vessels is necessary in the circulation of the blood, or so far as they have been diminished in activity, just so far will the circulation be retarded. *This is*

congestion, the indispensable preliminary step to the *post mortem* changes which follow in due order, as I will undertake to show in another paragraph. This may all, in the analysis, be traced to some cause which shall so act on the organic nervous system, or some part of it, as to destroy partially, or entirely, its influence over the vessels of some part or parts in the way already referred to. The agent, whatsoever it may be, by which this state is brought about, is what I suppose to be the *essential cause* of the disease. That there *are* known agencies which act not in the same, but in a *similar* way, I deem it unnecessary to show; and that this cause should act particularly on that part of the nervous system which controls the cerebro-spinal circulation, seems to me not any more strange than the peculiar action of many medicines which act on special parts of the body. If we reject the one because we cannot afford a rational explanation, for the same reason we must reject the other, but which, as a fact, no one thinks of disputing. We will then suppose the essential cause of the disease so to act on the organic nervous system, or that part, more *particularly*, which controls the circulation of the cerebro-spinal axis, as in various degrees to destroy its influence over the same, namely, the small arteries which ramify *so richly* in the *pia mater* and ventricular walls of the brain, and which do not have, as the larger arteries do, an *elastic* but a *muscular coat*. I should expect, *a priori*, any consequence which would flow from this state of the vessels to be most plainly marked where the vessels are most abundant, or on those parts of the pia mater most richly supplied with vessels, namely, parts at the base of the brain, along its fissures, sides, and upper surface of the brain, and on the medulla oblongata, and cervical and lumbar portions of the cord. This accords *entirely* with the *facts* of pathological anatomy.

Now, I suppose this poison to be capable, sometimes, of acting so energetically in destroying the exeitant energy of the organic nervous system, and probably directly on the brain and spinal cord, as to produce death so soon that no considerable traces of disease shall be left to be observed after death, suffi-

cient to account for the fatal result. Again, I suppose it may so act as to produce disorder of the capillary circulation, especially that of the cerebro-spinal axis, in the way already indicated. In various degrees its controlling influence over the circulation is destroyed. There is paralysis, more or less complete, of the muscular coat of the small arteries, the chief function of which, aside from that of a mere conduit, I believe to be to communicate a new impulse to the blood, *necessary* to circulate it through the capillaries. What I suppose to take place in the pia mater, *e.g.*, is *similar* to what *is observed* to take place in the conjunctiva or ear of a rabbit when the influence of the organic nervous system is withdrawn from the muscular vessels. I suppose the same phenomena to occur here as in the mesentery of a frog or the wing of a bat, at or toward the close of the experiments detailed. The vessels cease to contract, they relax, increase in size, not only for this reason permitting the blood to accumulate, but because they have lost the power to propel the blood onward, which is necessary to circulate it through the capillaries, which latter are entirely passive, as regards the circulation of the blood.

This is what I understand as *congestion*, and it results *not* from more blood being *sent* to the part, but because of increased size or capacity of the vessels, and because it is *detained* there through failure of the propulsive power of the small arteries. Blood is *constantly sent* to the part, but imperfectly sent away. Two conditions now favor transudation:—1st. *Stretching* or *thinning* of the *walls* of the relaxed vessels. 2d. *Increased expansive pressure from within outward, because* of a constant increase in the *volume* of the *blood.* I suppose the serous or watery part of the blood to exude *first.* Such is also the teaching of morbid anatomy. In it, and more especially a little later, the more solid elements of the blood, as the *fibrine* and *albumen*, or even the *corpuscles* at last. The blood thus detained in the vessels and made *viscid* by *loss of fluid*, I suppose to *coagulate*, and to be made here and there *utterly incapable* of being circulated, in this way permanently *obstructing* the vessels. The trouble once fairly initiated, it is easy to see how the

effusion may be increased, how nutrition of the brain and cord will be interrupted, and how, through this and the *pressure* caused by the effusion, etc., we may have produced many of the symptoms of this disease or even death. In this same way, would I account for most effusions or exudations *anywhere*, either in the tissues or on free surfaces, whether in this disease or others. This distension of the small vessels I suppose may go on, determined by many circumstances, in some parts, until the vessels shall give way and true hemorrhages occur here and there, especially in the tissues, and thus the ecchymosed spots seem many times produced.

The changes which the effused matter will undergo, will depend, of course, on a variety of circumstances, which it is not our purpose to enquire into here. I do not deem it necessary to suppose the muscular coat of the small arteries, in *this* case, to have lost the *power* to contract, but simply that the excitant they normally should receive from the organic nervous system to have failed.

It seems to be the province of the cause of this disease to produce a state of depression or sedation of the nervous system, especially the organic. While there are many known agencies capable of producing sedative effects on this nervous system, the peculiar character of this cause seems to be that of acting in a marked manner on that part of the sympathetic system which controls the circulation of the cerebro-spinal axis.

At this time and in this paper, it would be manifestly improper to go farther in adducing proof that this explanation is a reasonable, perhaps a true one. I should not have entered on the preceding statements, if they had not seemed absolutely necessary to enable me to explain what I have learned to regard as the pathology of the disease. I would gladly have referred to some work in which the views glanced at in relation to the circulation are, especially in the small vessels and the relations sustained thereto by the organic nervous system, given, but I have not seen a satisfactory statement of such views in any author. I have examined these questions with some care, as shown elsewhere. They are introduced incidentally only. In

a paper just referred to, I have examined, briefly, the principles glanced at in this discussion, and have shown their applicability in the explanation of many pathological states, as well as in the present case.

PATHOLOGICAL DEDUCTIONS, ETC.

In that part of the discussion over which we have passed, we seem to have reached the following conclusions:—

1. The symptoms which refer to the nervous system, while they vary, are, considered as a group, never absent. Other symptoms are mainly incidental.

2. The pathological appearances found in the cerebro-spinal cavity are, in some degree, always present, generally in a marked degree. Other pathological appearances mainly incidental. Contrary to the general opinion, it seldom attacks the serous surfaces within the cerebro-spinal cavity or elsewhere.

3. The blood before death uniformly shows a bright crimson color, coagulates rapidly and firmly, and often exhibits a decided buffy coat. Upon examination, it shows a decided increase of fibrine and, generally, of corpuscles. After death, the blood is generally, but by no means always, darker and more fluid than customary.

4. It is *not* a form of typhus.

5. It is probably neither contagious nor infectious.

6. It is probably due to a special external epidemic cause.

7. This supposed cause probably acts on the nervous system directly, perhaps primarily, whatsoever its action on the blood, so powerfully sometimes as to destroy life immediately, at others so as to induce, through the organic nervous system, disorder in the *circulation* and organic processes *dependent* on this nervous system, of the former, in a constant, special, and marked manner in the brain and spinal cord, entailing a series of consequences, where time is given, in this way, and probably by direct action of the cause on the blood, sufficient at last to produce death, independent of the real cause of the disease.

That the nervous system may recover its energy after the first impression of the poison, but through certain consequences, as effusion into the cerebro-spinal cavity, the disease may be

continued for weeks or even months, either to death or a slow and painful recovery.

8. That the blood is probably not primarily diseased but becomes notably changed in some respects *during* the *progress* of the disease, and, doubtless, contributes much after a time to the unfavorable or fatal results in cases which have some duration. That the state of the blood is, in some measure, possibly due to the direct action of the poison, but seems to be mainly due to the disorder of circulation and nutrition, induced by the above mentioned state and influence of the organic nervous system.

9. The disease may take a distinctive hue or character, so to speak, from the prevailing forms of disease, as erysipelas, malarial or periodical diseases, typhus, etc., and that it may be complicated with various *special* forms of disease.

10. That it *is* a *cerebro-spinal meningitis*, if we name the disease from the standpoint of *a group* of its *most obvious* and *constant phenomena* or *effects*, and all other titles given from similar standpoints, as "spotted fever," deserve to be abandoned for obvious reasons. That it is impossible, at this time, to give the disease a name from the standpoint of *causation* which shall be satisfactory.

THERAPEUTICAL DEDUCTIONS.

We seem to have two classes of cases in which the indications for treatment are somewhat different. Other subdivisions, more or less useful, have been or might be made, but the two classes here given seem to comprehend most, if not all, cases. They are:—

(*a*) 1. Those in which the cause operates with such intensity as to destroy life directly, before time has been given for pathological changes of any considerable importance to occur.

2. Those in which death does not occur directly from the effects of the poison, but in which the nervous system recovers from the first impression, and in which, time being given, pathological changes occur, as within the cerebro-spinal cavity or in th blood, many times sufficiently marked to become the cause of death or a protracted recovery, independent of the agency

of the primary cause, and which cases at last show much of the character of ordinary inflammation of the contents of the cerebro-spinal cavity, are often sthenic or febrile in character, and require a quite different therapeutical management, in many respects, from those of the first class.

(*b*) If the views we have adopted be correct, then, upon well-recognized principles in therapeutics, we should be led, *a priori*, to a course of treatment in general as follows. In view of the first class of cases, and the actual phenomena of the disease, as they appear at an early period, we would turn:—

1st. To such known agencies as would efficiently stimulate the organic nervous system, such as opium, cantharides, camphor, chloroform, strychnia, the active principles of coffee and tea, quinine, brandy, etc.

2d. To such external agencies as would prove revulsive, by promoting the circulation at the surface of the body, and which would at the same time prove indirectly stimulant to the nervous system, such as blisters, heat, frictions, stimulating embrocations, and sometimes the alternation of heat and cold, dry cups, local bleeding occasionally, faradisation of the skin, etc.

3d. We would not, *a priori*, approve of general blood-letting or any general sedative measures at this stage, only in exceptional cases, nor would we in this stage depend much on alteratives, such, *e.g.*, as the mercurials.

4th. In the second class of cases, we would expect internal stimulants not to answer so well as in the first class of cases, and in the early stages of the disease. External stimulation, as blistering, we would expect would prove useful over the back of the head, neck, and spine. We should be led to think more of the application of cold, of blood-letting, both general and local, and of alteratives, such as the mercurials, iodide potassium, bromide potassium, etc., than in the former cases.

Such, in brief, are some of the therapeutical deductions, from the views we have arrived at, concerning the nature of the disease.

THERAPEUTICAL HISTORY.

It now remains for us to consider the *therapeutical his-*

tory of the disease, and in so doing, not only to determine what the treatment actually *has* been, but what has been the most *successful* treatment, and how far it agrees with that which, in the light of general principles, we have deduced from pathological considerations, and still farther try and see what light from its therapeutical, can be thrown back on its pathological history. Keeping in view the two great classes of cases already referred to, I will consider the principal remedial agencies which have been employed in this disease.

I. SEDATIVES.—In a general way, they have not been found useful in the early part, but have found more favor in the latter part of the disease, and in cases distinctly febrile.

1. *Blood-letting.*—Mons. MATTOT, of Auch, BASSERON, of Alger, CORBIN, of Orleans, TOURDES, of Strasbourg, MAILLOT, of Lisle, and others, have bled very freely from the arm, and by cups and leeches, but lost more than 60 per cent of their cases. They generally bled early, and the bleedings were often repeated in some cases, but with unsatisfactory results. Dr. DRAPER, however, and those to whom he refers, seem to have derived advantage from local bleeding. Drs. MINER and TULLY, and Dr. KEMPF, are decidedly opposed to blood-letting on practical grounds. The same conclusion has been reached by HIRSCH and RUMMEL, in the Dantzig epidemic. They repudiate general, but in some cases have resorted to local bleeding, apparently with good effects. Much the same is the testimony of NIEMEYER. BROUSSAIS would, however, bleed in the beginning from the arm, in most cases, and resort subsequently to local bleeding in the most active cases. FORGET, LEVY, and some others, would bleed locally, and in some of the most sthenic cases would resort to general bleeding. And so, in general, has it been with the majority of observers whose experience has been sufficiently broad to be useful in guiding us to correct conclusions. The weight of experience is against its employment, except with great caution, and principally in the latter part of the disease. Local bleeding, by cups and leeches, has most favor.

2. *Cold.*—Cold is here considered only in its primary effect.

While some have found cold to the head and spine not useful, the majority of observers, perhaps, have had apparently satisfactory results. Its application is attended with most benefit after reaction, and in cases decidedly febrile in character, while early in the disease, and in those cases marked by extreme depression, it has not seemed to be attended by happy results. Among those who have found it useful, may be mentioned RUMMEL, who has found it good, almost from the beginning, in cases where the face was flushed, the head hot, and where there was much pain; but in cases where the face was pale, not much pain, stupor, and the pulse low, he has not seen it followed by good effects, but the contrary. HIRSH and NIEMEYER report much the same. PANTHER liked the effect of a cold shower after a hot bath. FOVILLE, BROUSSAIS, ROLLET, and others, both in this country and Europe, concur, in the main, in the statements just made. The employment of cold, seems to have been most favorable early in the disease, when opium has been administered internally.

3. What has been said of blood-letting may be said of other sedative agencies, such as veratrum, aconite, belladonna, stramonium, and other remedies which have a similar action with them. But few or none of them have had an extensive trial, but so far as they have been tried, they have not yielded encouraging results. Belladonna has, perhaps, the most evidence in its favor. In active or sthenic cases, such remedies have generally proved useful, if I rightly collect the scattered testimony concerning their use. Digitalis, if it can in all cases be considered sedative, has seemed to give some good results. RUMMEL speaks highly of its use in the first few days of the disease. ROLLET speaks favorably of laurel water, and MIAHLE of hydrocyanic acid. Such, in general, seem to be the results of experience in the use of sedative agencies in this disease.

II. STIMULANTS.—They have been found useful at all periods of the disease, especially in proportion as they are early employed, both external and internal.

(*a*) *Internal.* 1. *Opium.*—This stands not only at the head of the list of stimulants, but also at the head of remedial agen-

cies in this disease. There is none other, concerning which there is such unanimous and emphatic testimony. It has been employed in all stages, and in all kinds of cases, but has, generally speaking, proved most efficient in the early part of the disease, and in those cases which display the least acuteness in character. RUMMEL found it most efficient where the face was pale, pupils dilated, pulse low, etc., and in acute cases, if cold was freely applied to the head at the same time. But where copious exudation had occurred, it seemed to be of no advantage. It was very effective in allaying the sympathetic vomiting so often observed early in the disease. M. CHAUFFARD, of Avignon, found it highly beneficial. Dr. W. H. DRAPER gives very decided testimony as to its value, and assuming the disease to be a form of arachnitis, thinks the opium proves good here, as it does in peritonitis, since they are both inflammations of serous surfaces. I have, however, shown conclusively, that it is *not* an inflammation of the arachnoid. The most satisfactory results have been reported by MINER and TULLY, LIDDELL, BOUDIN, HIRSH, FORGET, LEVY, and many others. BROUSSAIS employed it freely after bleeding. These observers, and with them others, deem it the *best* remedy we have, while some, as HIRSH, and, more particularly, MINER and TULLY, consider it almost a specific. NIEMEYER, however, did not obtain such favorable results, though subcutaneous injections of morphia proved beneficial in his experience. The testimony of many others in this country might be added, as well as from Europe, but in the majority of cases they only serve to confirm the good opinion already expressed. The indications for its use, when they are mentioned, or as they appear, agree with those laid down by RUMMEL, from his experience. Here, as elsewhere, in the therapeutical history, the details are left to the judgment and good sense of such persons as this report may chance to reach.

2. *Quinine.*—A few observers have found this remedy beneficial, and especially in paludal districts in this country and Europe. WALES and GERHARD, in a limited experience, found it beneficial. Drs. OTTMAN and BURR, of Carbondale, Pa.,

found it useful in a few cases. But the majority are against its employment. RUMMEL, who seems to have been a very judicious observer, never found it useful, only in the later stages of the disease, when the mind had become clear, and then only as a tonic. Such has been my own experience. Mons. LEONARD and DURAND favor its employment, but evidently in cases where malarial influence has obtained. But HIRSH, whose experience was very extended, and who is a very competent observer, believes it does no good at all. Much the same has been the experience of Mons. GASTE, CHAUFFARD, PASCAL, FORGET, TOURDES, SCHILLIZI, etc. On the other hand, M. GASSAUD lost only 2 cases out of 126, according to his report. This excellent result he attributes to the early and free use of quinia. On the whole, it seems to be useful as a stimulant only in those cases complicated with malarial disease, and at an early period, or as a tonic toward the close of the malady, after the mind is clear, and febrile symptoms have disappeared.

3. *Cantharides.*—This remedy, from its known stimulating effect on the organic nervous system, would seem to promise some benefit. It has not been often tried, but, so far as it has been, the results are favorable. The individual who seems to have had the most extended experience with it, is Prof. ALLEN, of Rush Medical College, of this city. In his experience, and that of some others, it has yielded good results, mostly confined to the early stages, and in cases exhibiting marked depression.

4. *Strychnia.*—Dr. H. NOBLE, in a report on practical medicine, made to the Illinois State Medical Society, details a highly favorable experience with this remedy. Others, as WALES and PALMER, found it quite beneficial. It would seem, its use was attended with the most advantage in the early part of the disease.

5. Camphor, Carbonate Ammonia, Musk, Brandy, Valerian, and the various antispasmodics, have been employed. HALL seemed to obtain benefit from camphor and brandy; GERHARD from brandy; and such has been the experience of several physicians practising in the West in our late epidemics. FORGET

did not observe any advantage to result from the use of camphor, musk, ether, etc.

(*b*) *External Stimulants.*—External stimulation has proved one of the most efficient means in the treatment of this disease. It has been found useful at all periods of the disease. At the head of the list of external stimulants, stands blistering and counter-irritation along the spine. A few observers have not seemed to derive advantage from their use, but the majority have. DAVIS, of Chicago, NOBLE, THACHER, WALES, ATLEE, of Penn., HIRSH, BROUSSAIS, FORGET, and others, have recorded the most favorable results, as to the employment of blisters from cantharides, at all periods of the disease. RUMMEL highly recommends their use, especially in the middle and later stages of the malady. M. ROLLET obtained excellent results from the actual cautery, freely applied along the spine, especially in low cases. The application of stimulating embrocations and of severe frictions, especially over the spine and on the extremities, and the application of heat, either moist or dry, especially to the extremities, early in the disease, seems to have been attended with marked advantage.

III. ALTERATIVES.—They have, generally speaking, not proved useful in the early part of the disease, but have been satisfactorily employed in the latter stages of cases which have some duration, and especially where exudation has occurred abundantly.

1. *Mercurials.*—While some have seemed to derive advantage from them, those who have had the most extended experience have not had favorable results. RUMMEL, HIRSH, FORGET, CHAUFFARD, BROUSSAIS, DRAPER, etc., decidedly oppose the use of mercurials. M. ROLLET would use them prudently. Much the same is stated by M. LEVY. NIEMEYER seems more favorably disposed to their use. They seem to have answered best in complicated cases, and especially those where the secretions are inactive, and in the latter stages of acute cases with exudation.

2. *Iodide and Bromide Potassium.*—The former has proved highly efficient in the latter part of cases where exudation has

occurred. This was especially true in the case of HIRSH and RUMMEL. The bromide of potassium has been occasionally employed with apparent benefit. From its known power of controlling irregular action of the nervous system and its general tranquilizing effect, it would seem to justify a more full trial than it has had. It was tried with benefit in a well-marked case, by Dr. ROGERS, of this city. The permanganate of potash has seemed to be useful, but does not promise much, on account of its unstable chemical constitution.

IV. EMETICS.—I have seen but one author who recommends emetics. There does not seem to be but few, if any, cases in which they are indicated. In the beginning of some cases, it might be desirable to evacuate the stomach, but they are rare.

V. PURGATIVES.—They are often indicated, and have often been employed, sometimes with advantage, at others with no perceptible good, and in some cases apparently with harm. Mild purgatives or laxatives, to unload the alimentary canal, and afterwards to maintain the bowels in a soluble state, seem admissible, if not actually demanded. This, with a judicious use of tonics and a careful diet in the latter stages and during convalescence, constitutes the management found most successful, as I have been able to glean it from numerous observers, times, and places. I have aimed at general results, only in the therapeutical history, not deeming it within the province, as it was not possible, in the limits of this report, to give details of treatment nor specific direction.

By comparing the results of experience in the treatment with the prior therapeutical deductions, it will be found they agree as far as could be expected. This agreement goes to confirm the correctness of the views which led to the deductions just mentioned. I have only space *now* to refer to this agreement, and to say, I have endeavored to approach the examination of this interesting disease without a single prejudgment, and I have also endeavored to conduct my examination at least in full view of the *inductive method.*

I feel that if I had some more time, I might far better elabo-

rate some things in this report, but the limited time in which it has to be rendered, and the difficulty and irregularity of receiving reports from Europe, has made it impossible to do much more.

With these remarks, the report is respectfully submitted.

ARTILE XXXIX.

TYPHO-MALARIAL FEVER.

By WM. H. VEATCH, M.D., Pawnee, Sangamon Co., Ill.

Read to the Illinois State Medical Society, June, 1866.

I do not presume that I am the only member of this Society in whose practice has occurred cases of the disease that I am now about to delineate; neither would I arrogate to myself a preëminence in its successful treatment; nor would I say that I desire to present anything to the Society but my own humble experience in the diagnosis and treatment of a disease that, to say the least, has proven itself quite formidable, and one whose diagnostic signs were, in the first cases, so obscure that some time had elapsed, and several cases had been treated by myself and others, before an appropriate appellation could be given it; and even now, some good physicians are disposed to call in question the propriety of applying the name that I think the most appropriate. But as names are applied to diseases, corresponding to their nature and character, and as I believe the profession will sustain me in the name best calculated to convey to the mind of the medical student a correct notion of the nature and character of the disease he is trying to understand, I must be allowed to persist in calling the malady under consideration an epidemic of Typho-Malarial Fever.

A disease of a febrile character, which is manifested by a condition of the human system in which coma is a prominent symptom, we would call typhus or typhoid; and one whose signs manifest all the characteristics of a disease originating from exposure to causes generally known to produce hepatic

forms of disease, we would denominate malarial fever; and a fever that partakes of the nature and character of both the above forms of disease, science would dictate a name corresponding in significance to the nature and character of the double form the disease has assumed.

When a disease makes its appearance in a community and affects those only of a certain district, or is confined in its ravages to a certain class, we call it endemic. But if it prevails generally, we call it epidemic. And so, throughout the whole catalogue of maladies to which flesh is heir, we apply names corresponding to their nature and character.

The term *typho-malarial* carries with it an idea of a double form of disease, just the idea that is desired to be conveyed when speaking of the epidemic now under consideration, for almost all cases of fever occurring under my notice during the autumn of 1864 and throughout the year of 1865, partook more or less of this double character. But without farther discussing the propriety of the name at this point, I will proceed to a partial sketch of its history.

This fever made its appearance epidemically in the vicinity of Pawnee, Sangamon Co., Illinois, during the autumn of 1864, and, as the season advanced, its character was more and more developed, until the beginning of the winter, when it became so malignant that the mortality was somewhat alarming; but towards spring its malignancy abated to some extent. As the warm weather of 1865 set in, its virulence increased, and throughout the whole season was very severe, although the mortality was not so great, owing, perhaps, to the fact that its nature had become better understood, and, consequently, a more judicious application of remedies.

The first cases coming under my care, had all the appearances of a common remittent in its ordinary form of chills—thirst, transient pains through the body, aching of the back and limbs, tongue covered with a white or yellowish coating, sickness of the stomach, restlessness, and a remitting fever—but after from three to seven days of these symptoms, a decided typhus character was assumed, and the patient would

pass rapidly into a condition not unlike the third stage of typhoid fever, but by the time the third stage of typhoid should have made its appearance the patient would either have passed through the apparent third stage of typhoid and convalescence be established, or else he would have sunk into collapse and died, on or before the fifteenth day.

There was one case so peculiar in its progress, that I must delineate its history:—A widowed lady, of 35 years of age, delicate constitution, melancholy disposition, bilious temperament, was taken sick November 26th, 1864, with all the signs of an ordinary bilious remittent, as above described. 27th. A remission, followed by a recurrence of chills, and a more aggravated character of fever. 28th. Remission very slight, no chills, tongue heavily coated and dry, great thirst, extremely restless and manifests a preternatural strength, pulse full and bounding, bowels moving, bilious evacuations, skin pale and covered with a heavy perspiration. 29th. No sleep, notwithstanding the free administration of opiates during the night; pulse 110, full; tongue dry and more brownish; throat shows signs of congestion; soft palate and tonsils have a dark red somewhat puffed appearance. 30th. Countenance anxious, very pale; pulse 120, and small; all other signs as on the day previous. Dec. 1st. Notwithstanding the free use of alcoholic stimulants, a tendency to collapse continued; tongue almost black; pulse 130, very small, and easily compressed; throat shows signs of an exudation of blood. Coma came on by degrees, and she sank on the 2d, with all the signs of collapse of typhus. After death, petechiæ made their appearance over the chest, the abdomen and back being covered with small spots and blotches, from the size of a pea to that of a silver half-dollar, irregularly distributed over those parts, of a dust-brown color, some of them being almost bronzed. No *post mortem* allowed.

Other cases, similar to the above in the beginning, would run on to the eighth or ninth day without any symptoms of a typhus or typhoid character, and, when looking for a convalescence to be fully established, a recurrence of the chills would

take place, followed by an aggravation of all febrile signs, and in a day or two petechiæ make their appearance, delirium set in, congestion take hold of the soft palate and tonsils, heavy perspiration cover the surface of the body, diarrhœa would ensue, collapse and death by the fifteenth day; or, about the fourteenth day, would arouse, as from a profound slumber, and convalescence would be at hand. Other cases would run the course of an ordinary remittent, and, when about to recover, to all appearances, congestion would seize upon some of the vital organs, and soon it would be carried through the whole system and the patient sink under symptoms not unlike those of the pernicious intermittents of the old writers, or, as we usually term it, congestive chill.

All cases under my care recovered if they passed over the fifteenth day, except one, and I think most of the fatal cases proved so on or before the fifteenth day.

A few cases relapsed and died, I have been told, after convalescence had been fully established, but none of that class came under my notice. Yet another class of cases was occasionally met with, not unlike the beginning of the ordinary typhoid of this climate. The patient would feel indisposed for many days before the real attack would come on, indisposition commenced by general lassitude, depraved appetite, and, after some days, headache would come on by degrees, bowels either completely constipated or a watery diarrhœa of some days standing, referable, perhaps, to a dose of pills or other cathartic medicines taken at the beginning of the indisposition, and after from seven to fifteen days of simple indisposition, slight chills, with aching of the back and limbs, would indicate the coming on of a malarious form of disease, but the tongue showing a heavy brown coating down the centre, the tip and edges having a glossy red appearance, and a continued feverish condition of the whole system. After these symptoms had lasted from three to seven days, wild delirium set in, and the patient was said to have typhoid fever. Soon, the throat showed signs of congestion, and often the glands became tumefied and inflamed, and sometimes even suppurate, but more often an ulcer-

ation, not unlike that of diphtheria, would spread over the inner surface of the throat, the alvine evacuations having a muddy water appearance, and in a few hours, or a day or two at farthest, the patient would sink into a profound stupor, which usually terminated in death from seven to fifteen days after the appearance of the first chills; but when stupor did not come on, the patient would pass through a course of typhoid fever, and recover after a course of from fifteen to forty-two days. Not a few cases came under my care, the first symptom of which was the ulceration of the throat, the attendant fever being of a typhus character.

The eruption did not make its appearance at any regular period of the disease, sometimes coming on as early as the sixth or seventh day, and in other cases not until the eighteenth or twentieth, and one case had no signs of the eruption until the twenty-sixth day. In a few cases it could not be seen at all, and in those cases where the eruption was not to be found at any period during the fever, the symptoms were as urgent as in those having the greatest amount of it.

In all cases, the abdominal region presented a field for much anxious thought. I do not remember of treating a case in which there was not more or less trouble with the abdominal viscera; at times, however, it showed no points of interest until after the fifteenth or eighteenth day, when suddenly the abdomen became distended and tender, the countenance anxious and pale, great restlessness, alvine evacuations muddy and more abundant, and without speedy relief must sink into collapse and die.

There is one symptom in this affection that in most cases was a very prominent one, and one that gave me more trouble than any one symptom of the disease, and one, too, calculated to throw the practitioner off his guard unless he is acquainted with it, and, in my opinion, it is one of the best prognostic signs belonging to this form of disease. I have reference to a constant warm perspiration, often beginning with the onset of the disease and continuing throughout its whole course, and those cases in which the perspiration was the most persistent

were also the most obstinate to control, and a greater number proved fatal, in the progress of which the perspiration could not be checked, than in any other class of cases, which gave rise to the expression of the above opinion, that the state of the diaphoresis was one of the very best prognostic signs of the disease. In all cases where the perspiration ran on to a great degree before it could be checked, the bowels became the agent of prostration as soon as the perspiration ceased. It appeared that the work of prostration must be carried on through some channel until the virus of the disease had spent its force in the system and lost its power for harm, or death cut short the debilitating process.

This scourge had all the characteristics of an epidemic form of disease, and in some instances showed signs of contagion, as, frequently, nurses would be subjected to severe attacks; but in all cases of apparent contagion the disease could be accounted for by other existing causes, such as the general epidemic influence to which all were more or less exposed, and the same depressing influences to which those were exposed who had no opportunity whatever to have it communicated to them by contagion, and the great number of such cases would seem to preclude the idea of contagion altogether.

There does not appear to be anything peculiar in the surroundings of this vicinity calculated to lead to a solution of the cause or causes of so malignant a form of disease as this has proven itself to be. The only matter worthy of consideration in this respect is the fact, that all over this county is generated the elements of a koino miasma which is generally admitted to be the predisposing cause of hepatic forms of disease. And, in connection with this, it will be remembered that during the two years of the prevalence of this disease, the earth was completely covered with all kinds of vegetable growths belonging to this climate, the people subsisting to a great extent on them.

The county is in a pretty high state of cultivation, and has a sufficient amount of undulation to prevent, to a great extent, the stagnation of water. Many small streams make their way through the prairies, emptying their waters into the larger

timbered streams, the water being supplied from numberless small springs opening along their banks, constituting circumscribed marshes, from which arises the principal part of the koino miasma. But these marshes do not appear to be sufficiently extensive to have in them the amount of malignancy that this epidemic carried with it; neither do the habits of the people appear to have anything to do in the production of the disease. So far as the generation of an idio-miasma is concerned, the people almost all live in light wooden tenements, and but few of them have cellars.

Then our attention must be directed to some other agent for a full solution of the causes of the affection. I have already said that during the two years of the prevalence of the epidemic we had an abundant crop of all kinds of vegetation, and a great amount of the people's food consisted in vegetable matter. Now, it has been pretty fully demonstrated, that in animals subsisting on vegetable substances a greater amount of carbonic acid is retained in the blood than in those which subsist on animal food; and, according to DALTON, a less proportion of oxygen is retained in the system and a greater amount thrown back by exhalation in the carnivora than in the herbivora, in the proportion of about three to one. We must, therefore conclude that in those persons whose principal subsistence has been vegetable, that the blood is minus the proper amount of life principle, the oxygen, and plus the carbonic acid; consequently the blood is in precisely the same condition of those persons who are being exposed to the idio-miasma of densely populated cities, crowded hospitals, and prisons, where many persons are crowded together, in small, illy-ventilated tenements, which has been considered by the best authors as one of the causes of typhus and typhoid fevers. What chemical changes these miasmata produce in the blood I cannot say; but one important fact is patent to the most casual observer, *viz.*:—That these miasmatic influences exert a very great power of man's functional organization, and the two distinct influences acting on man's vital apparatus at one and the same time must, of necessity, exert a twofold effect in producing disease, and much greater reason

have we to ground this theory when we remember that the action of carbon in the blood produces delirium and, finally, coma, two of the most prominent symptoms in this affection. So, in this view of the matter, we find a solution to the great question of the causes producing the double form of disease, which also puts forever to rest the already exploded sophism, that two distinct causes cannot affect the system at one and the same time. These separate causes not only affect man at one and the same time, but, when each has had its specific effect in the system, they combine in producing an idio-miasma that not only affects the patient himself, but affects, also, those in attendance, thus supporting the popular notion of the contagiousness of the disease.

This epidemic had no respect for age, sex, or condition of life; the infant at the breast, the hoary-headed grandsire, and all the intermediate stages of life were subject to its ravages. But persons from fifteen to thirty years of age appeared to be more subject to it than the extremes of life; and males seemed to be more susceptible to its influences than females, owing, perhaps, to the greater amount of exposure to the causes.

All that is now left to be considered, is the principles of successful treatment. Now, in the treatment of any form of disease, it is proper, first, to consider the cause or causes producing the disease, and, if possible, remove them. But when the causes are so obscure that they cannot be definitely ascertained, we must be guided into a correct course of treatment by closely observing the effect of those causes, and if, happily, we succeed in counteracting them, we are practising from a correct theory, a rational standpoint; and if I should be mistaken as to the specific causes producing the disease, I cannot be mistaken in the effects produced by them. I have just shown that the vital powers of man are vehemently attacked by the venom of the disease; that delirium and coma are prominent symptoms in its course; and that these symptoms probably depend on a carbonized condition of the blood, for every characteristic of the disease proves a general depraved condition of the vital fluid, and, consequently, an inactive condition of all the vital organs.

A treatment, therefore, that will give renewed energy to the wasting vital powers of the system, a treatment that will increase the vital principles in the blood, give energy to the dormant functions of nature's complicated apparatus, arouse the latent powers of absorption and assimilation, bring back a unity of action between the several organs whose functions are so materially disturbed by the action of a blood poison; in a word, a treatment whose object it is to build up trodden down tissue and act in a direct opposite course to that taken by the disease, will, of all others, in my opinion, be the most eminently successfully. If a blood poison produces debility and prostration, it is the first duty of the physician to administer agents that will impart tone and energy. If a blood poison produces a carbonized condition of the blood, it is the duty of the practitioner to have recourse to those remedial agents that will impart oxygen to the vital fluid of life and thereby generate a more energetic electric current through the whole system, that all parts of the vital domain may have increased energy to cast off morbific agents, and that each part may have power to perform the important duties respectively assigned them by nature.

After we have determined upon a rational course to be pursued, another very important question arises:—Out of the whole catalogue of remedial agents at our command, which are to be chosen, and how are they to be employed, that we may best accomplish the end in view? Shall we by purgatives, in the onset of the disease, prepare our patients for stimulants and tonics in the latter stages? I answer, no!

Secondly. Shall we administer emetics and powerful diaphoretics, that we may eliminate poison from the blood, and thus have a rapid reaction of the vital powers to cast off morbific agents? I answer, never!

Thirdly. Must we, by a persistent course of mercury, excite secretion to such an extent that nature, by her own action, may attempt to build up broken down tissue? My answer to this, also, must be emphatically in the negative.

First. By the administration of purgatives in the onset of

the disease, we relax the coating of the stomach and bowels, and cause a pouring out of the fluids of the blood into their cavity, consequently, a more or less severe diarrhœa, characterized by the rice-water or soapsuds evacuations, and, instead of being a benefit, they only prepare those organs to cast off remedial agents in after treatment, by which we desire to build up the strength of the patient in arousing absorption and assimilation.

Second. By the administration of emetics and powerful diaphoretics, we only open up the channels through which the supplies of the great storehouse of nature will be carried off and squandered when the disease has set complete seige to the citadel of life.

Third. Mercury is known to be a powerful defibrinizer of the blood, and, when steadily administered, not only diminishes that property of the vital fluid, but also becomes a glandular irritant, by exciting secretion when there is nothing but the principles of depravity to be secreted. We thus cause an unnecessary routine of action in the secreting organs, and instead of building up the works of defence, we break down our already weakened fortifications. We must, therefore, conclude that the whole character of mercury, as a remedy in this disease, is an unmitigated evil, and if we would save our patients a great degree of prostration, we must give neither emetics, powerful diaphoretics, nor drastic purgatives; and above all, would I warn you against the use of mercury, to excite secretion, until you know that you have something more than poison to be acted on.

For fear that my position may be misunderstood on this point, I will here say, that I am a great admirer of the above named remedies in their proper and legitimate places, but I must be allowed to say that I do not believe their places exist in the treatment of typho-malarial fever. Our whole plan must be, as I have already indicated, to build up the system by promoting absorption and assimilation, and not arouse secretion too high until we have something in the blood from which to make tissue.

Now that I have pointed out the general principles on which a treatment is to be conducted, in my own humble judgement, I will proceed to the specification of such articles as, in my opinion, will be best calculated to accomplish the end in view.

When we find a patient laboring under obstinate costiveness, we should move the bowels by a mild enema of castile soap and molasses; this will cleanse the lower bowels and allow the contents of the stomach to pass down without irritation, and thus avoid the obstinate diarrhœa so often met with after the administration of calomel, blue mass, colocynth, jalap, or any other drastic purgatives. After the action of the enema, we should direct the patient to have a mild opiate, to promote rest; remove all sources of anxiety from the mind; and allow him to drink freely of a saturated solution of either chlorate or the acetate of potassium. This will oxygenize the blood, cause a renewal of the electric current through the system, prevent the decay of tissue, and also promote absorption and assimilation. After this course has been pursued from twenty-four to forty-eight hours, owing to the condition of the patient, we may add to the treatment a pill composed of chenoidine and ipecacuanha, two grains of the former to one of the latter, made into mass with the oil of black pepper—one to be given every two or three hours; and a Dover's powder at night, where there is not too much delirium, and, where the opiate cannot be used, the extract of hyoscyamus may be combined with the pill with great advantage. This comprises about all the constitutional treatment necessary in ordinary cases. The body of the patient should be washed twice a-day in soapsuds at first, and in the latter stages may be added to the wash alcoholic spirits, to give tone to the integuments of the skin. Applications of sinapisms and fomentations, for local irritations and complications, must not be neglected, particularly when the bowels become distended and tender, and accompanied by diarrhœa, which is almost universally the case at some period of the disease. If diarrhœa set in, which is sure to be the case if purgatives have been freely used in the beginning, astringents are to be used both by the mouth and rectum. If delirium supervene, cold

water or ice to the head. If heavy perspiration comes on, the dilute sulphuric acid must be freely used. Add to this treatment a proper course of nourishment, freely given, and in such manner that the greatest amount can be taken in the smallest compass, such as beef-tea, milk-punch, egg-nog, etc. Close attention to the condition of the bowels is one of the most important matters connected with the whole treatment, and by allowing the bowels to be too freely moved in the beginning, is, in my opinion, the cause of many cases proving fatal that would otherwise recover.

After first emptying the bowels by the use of a proper enema, they should not be moved again during the whole course of the fever; and if they should move spontaneously more than once in three days, astringents are indicated. In this position, I am aware that I will meet with opposition, and that too from some of my medical brethren for whose professional worth I have great respect. But as that opposition is founded on a mistaken notion of the correct theory of successful practice, I must be allowed to sustain the position by a statement of a few successful cases treated by myself, in proof of its correctness.

In my practice, I have demonstrated, to my own satisfaction, that the longer the bowels are held in check, the better for the strength of the patient; the more rapid the convalescence, the less liable to relapse; and from ulceration of the bowels, I consider the patient entirely exempt—a result so often met with where the bowels have been allowed to move too freely in the beginning. Of twenty-two cases treated by myself, those kept the longest without an action on the bowels made the most rapid convalescence; and, conversely, those that were allowed to be moved freely in the beginning of the fever were the most tardy and the hardest cases to control, other circumstances being equal. Of these twenty-two cases, eight were held twelve days; six were held fifteen days; five, sixteen days; and three were held eighteen days. Many others were held from six to eleven days, with the same comparative result.

I do not remember of but one case proving fatal after the bowels being held in check as long as three days, and that case

was so completely prostrated from the effects of carbon in the blood, that, as soon as the bowels checked, the colliquative perspiration took the place of the diarrhœa, as the prostrating agent, and he died six days after the bowels had been moved.

There is, yet, only one prominent symptom, the treatment of which is to be considered, namely, the throat affection. Many were found to have ulceration of the throat among the first symptoms of the disease, and every case in which the persulphate of iron was used as a gargle, the ulceration was almost immediately healed; and in those cases where the throat only took on congestion, the persulphate of iron was the most efficacious of all applications. I have also used with great benefit, the muriated tincture of iron, but as that is so common among all classes of physicians, its special notice here is unnecessary. But as I have never seen the persulphate recommended in this affection, I beg leave to call special attention to it, both as a gargle and as an excellent remedy in case of ulceration of the bowels, in doses of from three to five grains every two hours. This article, in my hands, has proved to be one of the most efficacious I have ever used.

I cannot close this article, without expressing my preference for the use of the gargle over that of the probang, in the throat affection. I have seen many cases in which I am confident that the probang did as much harm as the remedy did good; and in all cases where it is practicable, I would advise the use of the gargle in preference. But in children, or in adults who are so delirious they cannot be made to understand, the probang will have to be resorted to, but then it should be used with care.

In conclusion, allow me to say, I have only attempted to give my own opinions, backed up by my own practice, regardless of authority or the expressions of opinion by other members of the profession, and I think the principles herein set forth can be fully sustained in practice.

ARTICLE XL.

EPIDEMIC DISEASES.

By F. B. HALLER, M.D., Vandalia, Ill.

Read to the Illinois State Medical Society, June, 1866.

Upon my return home, about the 1st of April, 1865, I found an epidemic of erysipelas, rubeola, and pertussis, all of which were of a rather mild type, when uncomplicated; but, unfortunately, many of the measle cases were complicated with pneumonia, which rendered them exceedingly difficult to manage. One case that I saw in consultation, proved fatal. In a majority of the cases, the supporting and stimulating treatment had to be resorted to at the very onset of the attack, and in every instance was it required at some particular stage of its progress. Those of an uncomplicated nature, that I was consulted about, were left to good nursing and hygienic means, and made excellent recoveries, much better than those that were unfortunately drenched by their good mothers with the various panacea teas, the most popular of which is the celebrated sheep-tea, which the little fellows had to drink in large quantities, to the shame of their mothers.

There was nothing unusual in the cases of whooping-cough that occurred. In this disease, I used the bromide of ammonia with apparently good effect, and, from my experience with it, am led to believe it an excellent remedy in this disease, when uncomplicated.

The erysipelatous cases presented nothing of interest. They all readily yielded to ordinary treatment with iron and quinia. During the months of April, May, and June, there were a great many cases. About this time, I had several cases requiring surgical operations, and in every single instance, notwithstanding I used every precaution to prevent it, I had traumatic erysipelas to contend with, and came very near losing two of my patients.

Since June, there has been only an occasional case. As these epidemics began to subside, bilious fevers set in, and by

the middle of July, we were into one of the most prevalent epidemics of malarial diseases that has visited this vicinity during the last sixteen years, the time of my sojourn here, and, as usual when we have a good deal of malarious fevers, they were a mild type, and readily yielded to the proper remedies. Ever since then, throughout the entire winter and spring months, have we been having a great many cases of remittent, intermittent, and pernicious fevers, of a much graver character than occurred during the months of summer and autumn. There was this striking peculiarity about these fevers throughout this epidemic, that they required at least one-third larger doses to subdue them than they had at any former period, since I have been practicing in this locality, not only of antiperiodics, but of purgatives, opiates, or any other medicines that might be indicated in particular cases.

Never, during my residence of sixteen years in this place, have I seen these fevers so prevalent in winter and spring months, and the oldest citizens inform me that they never saw the like before. During this epidemic, I have used more mercurials than I ever did before, nor can I call to mind a single instance where a patient was ptyalized, beyond a mere touch of the gums. I am firmly of the opinion that by the free use of this potent remedy I was enabled to relieve my patients much sooner and had them more thoroughly cured, than by any other means I had at my command. Indeed, so happy were the effects of this remedy upon my patients, that for a time I had almost become an old fogy routinest.

During the last summer, we had but very little summer complaint amongst the children, less than ever I saw before, and what few cases there were were easily managed. I do not think we lost a single patient with this disease during the whole season.

During the autumn months, variola made its appearance in a neighborhood about 15 miles south-east of our place, which soon became epidemic, and by the beginning of winter, many of the families in that region had it. Quite a number of these cases were of a malignant character, and only yielded to the

most vigorous treatment. A goodly number of these cases were under the care of my partner, Dr. R. S. HIGGINS, from whom I obtained this information.

In January, it broke out simultaneously in our village and several adjoining neighborhoods, and continued for some time, and, as it was in the first neighborhood, quite a number of the cases were of a malignant nature. In a shanty in the west part of the town, which was poorly ventilated, nearly half those attacked died; and at the poorhouse, amongst the paupers, there were several deaths. What treatment or care these persons received I have no means of knowing.

The other cases were treated, mostly, by my partner, Dr. R. S. HIGGINS, who informs me that when desquamation began, and in some instances even before this stage, he had to resort to the supporting and stimulating treatment, by which method he was exceedingly fortunate, not losing a single case out of the many he treated. The few cases that fell into my hands were of a mild type, and required no treatment but an occasional purgative of castor-oil, and good nursing.

During this epidemic, we have had the very best of evidence in proof of the prophylactic effects of vaccination. There were no sanitary regulations, nor any means used to prevent its spread; nurses, and those who had varioloid in a mild form, mingled promiscuously with the people on the streets and in the avenues of business, and the only thing that was done to guard against its spread was vaccinating and re-vaccinating, which was pretty thoroughly done. Notwithstanding this free mingling of nurses, and those slightly affected, with the populace, it was not communicated in a single instance; and only in a few instances, did those who were exposed as nurses, or otherwise, who had been previously vaccinated, take varioloid. In one family of twelve, all living in one room, is proof most emphatic as to its prophylactic powers; here, an infant died, and the father had it in a malignant form, and not one of those who had been previously vaccinated had it in any form—were perfectly exempt from it, notwithstanding they were constantly in this one room, cooked, eaten, and slept there. There were sev-

eral instances nearly as striking as this. Certainly, these are strong proofs in favor of vaccination and re-vaccination, and it seems to me, all that is necessary to entirely free the human race from this scourge, is to compel every person to be vaccinated and re-vaccinated until it will take no more, and then inoculate with the pure variola virus. By this means, the system would become so thoroughly protected against it, that it would be utterly impossible for them to ever have it, even in the most mild form.

We have had much less pneumonia this winter and spring than usual, but the few cases that have occurred were more difficult to manage than common, many of them resulting fatally. Nearly all the cases that fell under my observation were asthenic in character, requiring beef-tea and stimulants from the beginning of the attack pretty freely. There was, in most of these cases, a marked tendency to congestion of the viscera of the abdomen, and, in a few instances, to spinal meningitis. These cases usually required large doses of quinine, until they were thoroughly under its influence.

Amongst the children that were attacked, during the months of February and March, with lung diseases, there was spinal meningitis in nearly or quite every case that came under my observation. These cases I treated with calomel, tartar emetic, and ipecac until the inflammatory action had subsided, when I put them upon full doses of chlorate of potassa and sulph. of quinine. During the whole period of this disease, up to the establishment of convalescence, I had rubefacients or blisters applied to the spine, with the most salutary effect. All my patients recovered, except one who was poorly cared for.

The past year has been one of great extremes of weather, such as was well calculated to produce more than the ordinary number of cases of sickness. For the last few months we have been having a great deal of easterly winds, more than I recollect to have ever seen before, which I think has been the cause, to a great extent, of the obstinacy of our diseases. Our very old people and those of feeble constitutions have suffered more in portion than the young and vigorous, as compared with other springs.

We have had less typhoid fever this last year, than for many years past, although there were a great many cases of remittent fever that assumed a typhoid character, and such cases were usually protracted and had to be strongly supported. These cases I gave beef-tea and milk *ad libitum*. The result was very satisfactory. Nearly all our cases for the past year have been of an asthenic character. This is becoming more and more so every year.

The lancet is scarcely ever used. Digitalis, tartar emetic, or veratrum viride are only in a few instances called into requisition. Opium will control the inflammatory action in most cases, and with it my patients make more rapid recoveries than under the more active treatment.

This, sir, is about a true character of the diseases that have occurred in our locality during the past year, given in a hasty, desultory manner.

ARTICLE XLI.

EARLY DIAGNOSIS OF THE BACKWARD CURVATURE OF THE SPINE.

BY JULIEN S. SHERMAN, M.D., Chicago.

The importance of diagnosing this disease in its insipiency must be apparent to all. Yet, in a large majority of cases, the difficulty is not suspected until the projection of one or more of the spinous processes reveal the fact, that the disease has already advanced to a change of structure and that a portion of the bodies of the vertebræ have undergone inflammatory softening, followed by absorption, and in many the cavity of an abscess formed.

The early recognition becomes much more important, when the fact is considered, that, the deformity once produced, we can do but little toward restoring the normal form of the spine. It remains a permanent change in its flexibility and symmetry. The arrest of its increase is the object to be accomplished by treatment.

The disease may, properly, be divided into two stages:—

1st. Simple inflammation of the intervertebral cartilages.

2d. Caries, suppuration, and deformity.

Very seldom is the inflammation of tubercular origin, but traumatic, following some injury to the spine, occasioned by a fall or blow upon the back, or violent flexion.

The age of the patient will also assist us in diagnosis; the disease being almost entirely confined to an early age, varying from one to eight years, during which period the spine is yet in the process of development and more liable to injury from slight causes.

Boys are more often the subjects of its attacks than girls, the reason of which is not obvious.

At the commencement of the first stage, the child will be noticed to play less vigorously than has been its custom, its motions are not as free, and there is an appearance of stiffness to the back, and an effort to remove the pressure from the inflamed tissues by resting the elbows on a table or chair, and supporting the shoulders and chest. When reaching to grasp articles from the floor, it will endeavor to accomplish the same object by placing one hand on the knee.

The inflammation, once started and aggravated by motion and pressure, slowly increases. The child now complains of pain, the position of which will aid us in determining what portion of the spine is affected. Seldom, in this stage, is there pain in the back—if present, it is deep seated, and tenderness cannot be detected by manipulation—but it is confined to the stomach and bowels; also radiating on the sides. It is not of a severe or spasmodic kind, but dull and persistent. These symptoms are often attributed to disorders of the digestive apparatus. They will be distinguished by the condition of the tongue and secretions, which, in this stage of spinal disease are not affected. Very rarely, the cervical region is involved, and the pain then is situated in the shoulders and sides of the neck. Difficulty of deglutition and disturbed respiration are sometimes experienced, although no special disease of these organs can be detected. The sleep of the patient is also disturbed, and the pulse increased in frequency.

If, in a period ranging from one to eight months from the commencement of the disease, the back be carefully examined, it will show, in some portion of its extent, a *bulging;* not a sharp *angular* projection, but a rounded prominence. The inflammation is yet limited to the cartilages and has not involved the bones. The projection is, consequently, produced by the approximation of the bodies of several vertebræ, which continues the curve over a larger portion of the spine and gives it the oval appearance.

Soon, the sharp projection of one of the spinous processes of the vertebræ makes its appearance, and the characteristic sharp angle is formed. It has now advanced to the second stage and the deformity has begun. The inflammation has proceeded to the body of the vertebra corresponding to the projecting process; softening and absorption of its structure has taken place, allowing the bodies of the vertebræ above and below to approximate more closely, and give the appearance of a backward dislocation of the diseased one. The destruction is now more rapid, and caries and suppuration soon follow. The membranes of the spinal cord, and sometimes the cord itself, becoming involved, partial paralysis of the spinal muscles often ensues, causing one shoulder to drop, and giving the patient a sidewise motion in walking. If confined to the lumbar region, the same pathological condition causes reflex contractions of the flexor muscles of the thigh, which may be mistaken for hip-disease. The differential diagnosis is, however, easy. There is no pain or tenderness in the hip-joint, and none referred to the knee, so characteristic in that disease.

The angle is sometimes projected laterally, simulating lateral curvature. It may be distinguished from this by its abruptness and sharpness. The lateral form being an even and rounded curve, as it advances it assumes more the backward direction.

The symptoms in the first stage are sufficiently characteristic, that a close observer will not fail to detect the disease. We can seldom err in our diagnosis, when we find them following an injury; and only on their early recognition and prompt treatment can deformity be avoided.

Book Notices.

A Practical Treatise on the Physical Exploration of the Chest, and the Diagnosis of the Diseases of the Respiratory Organs. By Austin Flint, M.D., Prof. Prin. and Prac. of Med., in the Bellevue Hospital Med. College, and the Long Island College Hospital; Fellow of New York Medical Academy, etc. Second edition, revised. Philadelphia: Henry C. Lea. 1866.

This is a well-executed volume, of about 600 pages. The first edition has been long enough before the profession to have its merits well known. The present edition exhibits indications of having been carefully revised and, in some instances, altered in accordance with the more extended opportunities for observation which the author has enjoyed for the last few years in the Bellevue and Long Island Hospitals. The contents of the book are sufficiently indicated by its title; and we freely commend it to the study of the profession.

For sale by W. B. Keen & Co., 148 Lake Street.

Elements of Medical Chemistry. By B. Howard Rand, M.D., Prof. of Chemistry in the Jefferson Medical College. Philadelphia: T. Edward Zell & Co., 17 & 19 South Sixth Street. 1867.

This is a neat little volume of 400 pages, being made up of a syllabus, or full notes, of the course of lectures given by the author in the Jefferson Medical College. The arrangement of the work is as follows:—An Introduction on the Properties and Qualities of Matter, and of Force. Part 1st. On Physics, including Gravitation, Light, Heat, and Electricity. Part 2d. On the Principles of Chemistry. Part 3d. On the Chemistry of the Elements. Part 4th. On Organic Chemistry. And an Appendix, on Weights and Measures; Incompatibility; Antidotes and Precautions in Medico-Legal Examinations; Precautions for Practice; List of Minerals; and Glossary. We think it will be found a most convenient little book of reference, both for students and practitioners.

For sale by W. B. Keen & Co., 148 Lake Street.

A Manual of Blow-Pipe Analysis, and Determinative Mineralogy.

By Wm. Elderhorst, M.D., Prof. of Chemistry in the Rensselaer Polytechnic Institute. Third edition, revised and greatly enlarged. Philadelphia: T. Ellwood Zell, Pub. 1866.

This is a small volume, and will be found interesting and valuable to all those who wish to study mineralogy and metallurgy.

Editorial.

Death of Prof. D. Brainard.—With feelings of deep sadness we record the death of one of the most prominent surgeons in our country. Daniel Brainard, so long at the head of the department of surgery in the North-west, was attacked with epidemic cholera on Tuesday night, and died on Wednesday afternoon, the 10th inst. Although only 53 years of age, a period which should be the vigor of active manhood, it was generally understood that Dr Brainard's health had not been good for one or two years past.

At the commencement of his professional career, he took special pains to qualify himself for the practice of surgery, and almost immediately became identified with the establishment of Rush Medical College in this city; the Surgical Chair in which he filled with marked ability until the day before his death. He was never popular as a general practitioner of medicine, and during the last *ten* years of his life his professional practice was restricted almost exclusively to surgical cases. He was not a showy or brilliant operator, but a deliberate, accurate, and successful surgeon. It was in the lecture-room, however, in his capacity as teacher, that he achieved the highest reputation. Possessed of a mind well stored by reading and observation, and thoroughly disciplined by reflection, his didactic instruction was clear, concise, and impressive; giving him an enviable popularity as a lecturer. In his unofficial capacity, as a member of the profession, Dr. Brainard was not noted for genial affability, scrupulous regard for ethical rules, or cordial coöperation in the support of medical organizations. He

was not only studious in everything relating to his favorite department, but he often entered boldly upon original investigations and experiments concerning such topics as strongly attracted his attention. Though he wrote no complete work upon any department of medical science, yet the results of his experiments in the treatment of ununited fractures; on the effects of iodine on the poison of serpents; and on the effects of lactate of iron injected into the veins, in the treatment of the cancerous diathesis, will perpetuate his name on all the future annals of our professional literature. Although the strictly professional income of Dr. BRAINARD was never large, yet, by some successful real estate operations, he had secured to himself and his family an ample fortune.

The action taken by the profession of our city, and also by that of Springfield, in honor of the deceased, will be found on the following pages of this number of the EXAMINER.

THE DEATH OF DANIEL BRAINARD, M.D.—MEETING OF THE MEDICAL PROFESSION.—A meeting of the members of the medical profession was held on the afternoon of Thursday, Oct. 11th, at the Common Council room, to take suitable action in regard to the sudden death of DANIEL BRAINARD, M.D., who was recently stricken down in the maturity of his powers and the zenith of his honors, by the cholera. The meeting was organized by the appointment of Dr. Duck, as Chairman, and Dr. Charles G. Smith, as Secretary.

On motion, the Chair appointed a committee of five to draft resolutions expressive of the regret of the profession at the demise, and evidencing their sorrow and grief at the dread visitation which had thus inopportunely carried away an ornament to the profession.

The following gentlemen were designated as such committee: Drs. McVicker, Johnson, Trimble, Smith, and Byford, and after a brief absence they presented the following resolutions, which were unanimously adopted:—

Resolved, That in the dispensation of Divine Providence, who has removed from our midst our deceased friend and brother,

Daniel Brainard, we recognize the hand of Him who doeth all things well, and we bow submissively to His will.

Resolved, That our deceased brother, by his natural powers of mind, by his capacity as a teacher, by his industry, by his untiring zeal and assiduity in the profession of which he was a distinguished member and ornament, has acquired a position of character and usefulness, recognized not only by his colleagues at home, but by the profession throughout the world.

Resolved, That, in his example, we read the great lesson of encouragement in the path of duty and honor, and, while humbly seeking to imitate it, we hold it up to the consideration of members of his own and other professions elsewhere, and that in his death the profession of our city and the North-west has suffered an irreparable loss.

After the adoption of the resolutions, Dr. Brock McVickar paid the following feeling tribute to the memory of the deceased:

EULOGY BY DR. BROCK MCVICKAR.

The occurrence which has called us together this afternoon, is recited in brief and emphatic words in the daily papers of our city:—Died, in this city, Oct. 10, of cholera, Daniel Brainard, M.D., aged 53 years.

When we were last assembled in this room, gentlemen, it was to record our respect for a departed brother who had been called away in the spring-time of professional life, with the future all bright and promising before him. To-day, we come to pay the same sad office to another, one older in years and full of honors, whose ambition and aspirations of the future had become to him fruition in the present, and who stood, with well-earned laurels, at the head of a profession, which he dignified and crowned.

Daniel Brainard was no ordinary man; he was possessed of high and sterling ability, quickened and developed by culture and study: of untiring industry, of unremitting perseverance and unflagging zeal in the pursuit of knowledge. He was called cold and reticent at times, but what seemed coldness to many was but the absorption of a strong and earnest nature, pushing forward to the attainment of the high mark he had proposed to himself. He had an abiding hatred for pretenders and shams, and looked with little favor upon those who followed their profession without seeking to rise above its daily routine of duty; when once satisfied of a man's integrity, and earnestness, and intelligent devotion to his profession, he was his friend.

With Dr. Brainard, with but a slight interruption, my relations, personal and professional, have always been of the most agreeable character; and, at the time of his death, they were particularly so; and I shall never forget how, during my last interview with him, but a few days since, I was impressed with respect and regard for him, as a gentleman courtly in his manners, polished by foreign travel and culture, the peer of the highest in the land.

His career, gentlemen, may serve to illumine the pathway of the student, to quicken him to higher and better efforts, and give him assurance of success. Of Brainard's success, much feeling has been manifested by smaller minds, many times falling under my own notice. He was restless sometimes under this jealousy and its resulting injustice, and that restlessness toned and tempered his feelings; but when a man has attained the measure of success which fell to his lot, and which he earned so faithfully, he can afford to smile instead of being annoyed, and look down, as he did in his later years, with the calm consciousness of superiority, grafted by his own hand and his own exertions, or powers and faculties given him by God. But he is gone from us, and the places which knew him once shall know him no more again forever. Peaceful be his rest, green be the turf which grows above him, and bright be the place which he shall hold in the memory of the friends he has left behind him.

Drs. Davis, Johnson, and Paoli followed Dr. McVickar, and spoke feelingly and affectionately of the manifold virtues of the deceased, his exalted professional ability, and the endearing reminiscences which would ever follow his memory in their hearts.

Dr. Blaney presented a request from Dr. Powell, the nephew and only surviving relative of deceased in the city, soliciting the meeting to designate six members of the profession to officiate as pall-bearers at the funeral.

The Chair, in consonance with the sense of the meeting, appointed the following gentlemen:—Drs. Hitchcock, Duck, Eldredge, Johnson, Paoli, and Hamill.

Dr. Johnson submitted to the meeting a proposition relative to taking a cast of the features of deceased, previous to interment, and their lasting perpetuation either in statuette or bust models. Several gentlemen expressed their approbation of the

movement, and, in pursuance thereof, a committee, consisting of Drs. Hamill, Johnson, Blaney, Davis, and Miller, was appointed to carry the design into effect.

The meeting then adjourned.

Meeting of the Sangamon County Medical Society.—Resolutions of Respect.—A special meeting of the Sangamon County Medical Society was held in the city of Springfield, October 13th, at 3 P.M. The President being absent, Dr. Wright, of Chatham, Vice-President, took the Chair.

On motion of Dr. Wardner, the Chairman appointed a Committee of three to draft suitable resolutions regarding the death of Dr. Daniel Brainard, of Chicago. The Committee consisted of Drs. Wardner, Griffith, and Bailache.

On motion of Dr. Townsend, Dr. Wright was added to that Committee.

The Committee reported back the following preamble and resolutions, which were unanimously adopted:—

Whereas, It has pleased an All-Wise Providence to remove by death, Daniel Brainard, M.D., late President and Professor in Rush Medical College, whose ability and professional attainment gave him high rank in medical science, not only among friends and acquaintances, but among all devotees of the science he so much honored, therefore,

Resolved, That in the death of Dr. Brainard, the profession is bereft of an able teacher, science of an ardent student, and the community in which he lived of a valuable citizen.

Resolved, That we tender to the faculty of Rush Medical College our condolence for the loss of its President, and one of its most honored teachers.

Resolved, That we tender to the afflicted family our sympathies in this, their hour of sad bereavement.

Resolved, That the Secretary furnish a copy of these resolutions to the family of the deceased, and the faculty of Rush Medical College. Also, a copy to each of the papers of this place, and to the *Chicago Medical Examiner* and *Chicago Medical Journal*, for publication.

N. WRIGHT, *Chairman.*

A. L. Converse, *Secretary.*

REPORT OF THE COMMITTEE ON THE SANITARY CONDITION OF THE CITY, AND THE PREVALENCE OF CHOLERA, DURING THE MONTHS OF AUGUST, SEPTEMBER, AND OCTOBER, 1866.

By N. S. DAVIS, M.D., of Chicago.

Read before the Chicago Medical Society.

According to previous report, the last three days of July were cool, clear, and pleasant. It remained cool, with a prevalence of north and north-east winds, until the morning of the 8th of August. Showers of rain fell on the 3d, and a steady rain all the night of the 6th and 7th. On the morning of the 8th, the wind had changed to the south; the air was filled with mist or aqueous vapor, and, at midday, was very warm and oppressive. Between 5 and 6 o'clock P.M., the wind suddenly changed to the north, and the atmosphere became so cool as to produce chilliness. It remained cool and clear until the 11th, when the wind changed to the south, the sky became cloudy, and in the evening there fell copious showers, with sharp lightning. The 12th was mostly clear, wind south, and atmosphere exceedingly warm and damp. These conditions continued until 11 o'clock A.M. of the 13th, when the wind again changed to the north, and the air became cool and clear. But at midnight, the wind again changed to the south, and the morning of the 14th was hot, damp, and oppressive, with showers of rain in the afternoon. From this time to the 20th, the atmosphere was still, or moved only slightly by winds from the south or south-east, very damp, and moderately warm. During the 17th and 18th, especially, the air was still and so light that smoke and mist hung close to the earth, instead of rising or of being lifted to the higher regions. Rain fell very moderately in the evening of the 18th, and during the afternoon of the 20th. During the 21st, 22d, and 23d, the wind blew from the north, and the atmosphere was decidedly cold but damp, and steady rain nearly all of the 23d. During the 24th and 25th, the wind continued north, and the air was clear, cold, and dry; so cold, indeed, that an overcoat was required for comfort during the whole day.

From the morning of the 26th to the 31st, the atmosphere was again still, damp, and moderately warm; very similar to that from the 14th to the 20th. It was filled with smoke and mist, especially during the nights. The slight winds that were felt were from the south and south-west, except during the afternoon of the 28th, when it blew from the north-east, and was cooler. Slight rains fell on the 29th and 30th, and in the evening of the 31st, copious showers fell, with thunder and lightning, during which the wind changed to the north-west and blew up a stiff breeze. Vivid flashes of lightning continued until a late hour in the night. It was the first display of the kind during the month.

From the 1st to the 25th of September, the weather was almost continuously cool and rainy, with a prevalence of north and north-east winds. The rains were so frequent and copious that the surface of the earth was kept constantly saturated with fresh fallen water. Occasionally the sun would shine out clear and warm for two or three hours in the middle of the day, but during the whole time named there were not three consecutive warm, dry days. From the 26th of September, however, until the 7th of October, the atmosphere was clear, pleasant, and moderately warm, though the prevalent winds were continued from the north, north-west, and north-east. On the 7th, the wind changed to the south, and became very light. From the 7th to the 13th, the atmosphere was filled with mist and smoke, and so still as to be scarcely moved by a breeze, either day or night. The sky was most of the time clear, and the temperature moderately warm. On the 13th, a light breeze sprung up from the north-east, the air was more bracing, and the fog or mist that had so steadily filled the lower strata of the atmosphere was dissipated in twenty-four hours. From this to the evening of the 19th, the weather was mostly clear and pleasant though warm, and very little wind from any quarter. On the 20th, the wind changed to the south-west and blew strongly, followed by clouds and some rain. The following night, there were copious showers, with thunder and lightning and strong wind from the west. The 22d was cold, nearly clear with a strong west wind, and frost at night. The 23d was cold,

cloudy, with light falls of snow, sufficient to whiten the sidewalks. At this date, the evening of the 24th of October, it remains cold, cloudy, with north-east wind.

During the first seven days of August, cases of typhus fever and dysentery continued numerous, but attacks of cholera infantum and serous diarrhœa were less frequent than in the middle of July. On the 8th, there was, in my practice, a sudden increase of the latter class of affections; and a still more marked increase on the 12th, when I met with one case of cholera at 109 North Water Street, and another on Wabash Avenue, south of Twelfth Street.

On the 6th of August, a company of Mormons left one of their number, a native of Denmark, sick at the railroad depot, from whence he was taken to the County Hospital, located between 18th and 19th Streets, where he died in the evening of the same day with all the symptoms of epidemic cholera. On the 9th, three days after the Dane died, a female nurse and a male inmate of the hospital were attacked. From this time, one or more cases occurred daily among the inmates of the hospital until the 18th, when it ceased. Whole number of cases occurring in the institution, from the 6th to the 18th, was 19; of whom 11 recovered and 8 died. Nearly simultaneous with this outbreak in the County Hospital, cases of cholera occurred in almost every section of the city.

On the morning of the 14th, I was called to three cases widely separated from each other. One was at 63 Michigan Avenue, and another at 323 South Morgan Street. From this time until the 20th, new cases occurred daily in all parts of the city, although the aggregate number did not exceed an average of 20 per day. From the 20th to the 26th, there was a decided decrease in the number of cases, followed, however, by a moderate increase again from the latter date to the end of the month. The whole number of deaths from cholera during the month, as reported at the Health-Office, was 139, or a little more than 4 per day.

From the 1st to the 25th of September, the disease continued pretty nearly a uniform ratio of prevalence, although it was

restricted more closely to the population of foreign birth, and in parts of the city least influenced by drainage and cleanliness. For instance, the whole number of deaths reported from this disease during the month was 166, or an average of 4 per day. Of these, 88 were natives of Germany, 40 of Ireland, and only 20 of the United States. During the last week of September, the disease declined so much that many regarded it as substantially extinct. So true was this, that the editors of the *Chicago Medical Journal* inserted the following paragraph in their issue of the 1st of October:—"In our next issue we intend to give our readers a complete sketch of the course of cholera in Chicago during the present season. The number of cases has been comparatively small, and is rapidly approaching a minimum."

The decline in the prevalence of the disease continued until about the 7th of October, when it began to increase so rapidly that from 18 cases and 7 deaths, reported on the 7th, it reached 66 cases and 17 deaths on the 11th, and 62 cases and 24 deaths on the 12th. This seemed to be the climax of its prevalence, and its decline was almost as rapid as its access. Thus, three days subsequently, namely, on the 15th, the whole number of cases was 38, with 10 deaths; and on the 17th, only 26 cases and 3 deaths. The whole number of cases reported to the Health-Officer, from the 7th to the 21st of October, was 522 of whom 135 only proved fatal. During this sudden exacerbation of the disease, it continued to manifest the same predilection for the population of foreign birth, living in undrained and uncleanly localities, as during the month of September. Thus, of the 522 cases reported, only 130 were represented to be natives of the United States.

If we compare the foregoing figures with the fact that this city contains a population of over 200,000, it will be seen that the prevalence and fatality of cholera during the past season has been far less, comparatively, than during former epidemics.

Although the prevalence of cholera in this city, during the last three months, has been very moderate in comparison with other Western cities, or with former epidemics here, yet, in all

its features, it has been identically the same disease as in 1849 or 1854. The whole number of cases in proportion to the population has been very small, but the severity of such cases as have come under my observation, has been fully equal to those occurring in the former epidemics. I have not been able to trace a single new feature in relation either to the symptoms, pathology, or tendencies of the disease.

Treatment.—After three months of daily observation at the bedside of cholera patients, you may expect something from me in regard to the treatment of this dreaded disease. When this subject was under discussion in the Society several months since, I expressed freely my views in regard to the nature of cholera and the details of its treatment; and those views were published in the April number of the CHICAGO MEDICAL EXAMINER. Since then, I have watched, with much care, the effect of different remedies and different modes of treatment. I have seen some cases treated during the active stage with alcoholic exhilarants; others, with opiates; and still others, with salines and evacuants. A young woman, previously healthy, was attacked at breakfast-time, in the morning, with severe symptoms of cholera. A physician reached her in about two hours, and commenced, immediately, the use of brandy. He gave it in moderate, but frequently repeated, doses, until, in from three to four hours, she had taken a full pint of the brandy and some wine. At the end of that time she was in perfect collapse, pulseless, cold, and blue. No other medicine had been given. In four or five hours more she was dead. In no case have I been able to detect the slightest beneficial effect from this class of agents. Those cases, to which I have been called, in which opiates had been exclusively or chiefly relied upon during the active stage, have either had the discharges only temporarily checked, or have exhibited a persistent tendency to stupor, suppression of urine, hiccough, and ultimately death. Similar results have followed a reliance on the various cholera mixtures sold by druggists, consisting of opium, camphor, cayenne pepper, and sometimes rhubarb, in varying proportions. I saw four cases that had

been treated by evácuants. The first was a man who, during the early part of the active stage, drank freely of seidlitz powders. He passed rapidly into a state of collapse and died. The second was a man who said he had taken, at the commencement of cholera symptoms, an emetic, followed by a dose of sulphate of magnesia, and still later by a dose of castor-oil. He did not go into complete collapse, but lingered three or four days, in a state of great exhaustion, and then died, the stomach appearing to have lost all power to absorb even the blandest articles of nourishment. The third and fourth cases had been treated with repeated doses of castor-oil and small doses of brandy. Both terminated fatally. From all my observations the present season, I am forced to the same conclusions in relation to the nature and treatment of the disease as in 1854, and as fully expressed in the former discussion in this Society.

From the 1st of August to the 28th of October, 205 cases of what I regarded as cholera came under my observation. Of these, 102 were in the first stage, or that of simple cholera diarrhœa, of which all but one recovered. When first seen, 77 were in second stage, or that of active vomiting, purging, cramps, etc., of which 18 died, and 59 recovered, When first seen, 26 were in the third stage, or that of complete collapse. By complete collapse, I mean a condition in which the pulse is no longer felt at the wrist; the surface is cold, corrugated, and purple or leaden color; the urine suppressed, etc. Of the 26 seen in this condition, only 2 recovered. One of the two that recovered from collapse was a boy about 7 years old. He lingered in a state of extreme feebleness for ten or twelve days, and presented well-marked ulceration in the lower half of the cornea, in both eyes. His recovery was ultimately complete. The other was a young man residing at 386 Indiana Street.

In making up the foregoing statistics of cholera cases coming under my observation, I have not included any cases of children under two years of age. The prevalence of *cholera infantum* was very severe in July, less in August, and still less in Sep-

tember and October. The treatment on which I have relied in the management of cholera this season, has been substantially the same as I found most efficient in the former epidemics, and, consequently, I need not repeat it here. The question, how far the prevalence of cholera this season has thrown light upon its essential causes, and its relation to certain other diseases, will be considered more fully in another communication to this Society.

Easily Frightened.—It seems that when the cholera began rather suddenly to increase in this city during the 8th and 9th of October, a part of the Faculty and students in Rush Medical College became decidedly alarmed; and on the morning of the 10th, at the suggestion of members of the Faculty, a large majority of the students voted to have the lectures suspended, that they might immediately leave the city. A suspension, consequently, actually took place, and the lectures were not resumed until the 22d of the same month. When it is remembered that the highest number of deaths from cholera in any one day during the present season was 24, in a population of 200,000, it must be confessed that our neighbors in Rush Medical College were rather easily frightened.

Poisonous Principle of Mushrooms.—Dr. Letelleir says, that the poisonous substance in mushrooms is a fixed, non-crystallizable, narcotic principle—amanitine. It is precipitated by iodine and tannin. The treatment for poisoning thence resulting is vomiting and purging, followed by a strong aqueous solution of tannin.—*British Medical Journal.*

Cryptogamous Origin of Intermittent Fevers.—The editors of the *Atlanta Medical Journal* state that a friend, led by the experiments of Dr. Salisbury, is investigating this subject, and will probably communicate something valuable in regard to it.

Obituary Record.—Died, in Boston, Sept. 15th, 1866, of cholera, after an illness of only a few hours, Augustus A. Gould, M.D., a very eminent physician and accomplished naturalist, and late President of the Massachusetts Medical Society.

MORTALITY FOR THE MONTH OF SEPTEMBER.—

CAUSES OF DEATH.

Accidents,	14	Fever, Scarlet,	12
Apoplexy,	2	Fever, not stated,	4
Burned,	1	Flux,	1
Cancer,	4	Hydrocephelus,	3
Childbed,	5	Inflammation of Kidneys,	1
Cholera,	166	Inflammation of Brain,	4
Cholera-Morbus,	36	Inflammation of Bowels,	14
Cholera Infantum,	6	Inflammation of Lungs,	7
Colic,	1	Inflammation of Stomach,	1
Congestion of Brain,	2	Killed,	3
Consumption,	29	Measles,	14
Convulsions,	20	Marasmus,	1
Croup,	6	Old Age,	13
Chicken-Pox,	1	Phthisis Pulmonalis,	1
Disease of Brain,	1	Pneumonia,	2
Disease of Heart,	11	Scrofula,	2
Disease of Liver,	1	Small-Pox,	1
Disease of Kidneys,	1	Stillborn,	6
Delirium Tremens,	4	Summer Complaint,	87
Decline,	1	Suicide,	3
Dropsy,	11	Teething,	26
Diarrhœa,	23	Tuberculosis,	1
Diphtheria,	9	Whooping-Cough,	40
Dysentery,	13	Worms,	1
Drowned,	7	Wound,	2
Epilepsy,	2	Unknown,	53
Fever, Typhoid,	35		
Fever, Childbed,	2	Total,	739
Fever, Remittent,	16		

AGES OF THE DECEASED.—Under 5 years, 329; over 5 and under 10 years, 48; over 10 and under 20, 36; over 20 and under 30, 77; over 30 and under 40, 106; over 40 and under 50, 68; over 50 and under 60, 40; over 60 and under 70, 22; over 70 and under 80, 3; over 80 and under 90, 3; unknown, 7. Total, 739.

NATIVITIES.

Chicago,	311	Ireland,	83	Russia,	1
Other States,	108	Norway,	25	Switzerland,	1
Canada,	3	Bohemia,	17	Wales,	1
Denmark,	2	Scotland,	4	Sweden,	15
England,	15	Finland,	2	Unknown,	8
Germany,	122	Itlay,	1		
France,	4	New Brunswick,	1	Total,	739
Holland,	6	Poland,	3		

CHOLERA HOSPITALS.—The following is the substance of a report drawn up by the Council of the Epidemiological Society, and is of unusual interest at the present time:—

I. There appears to be a general concurrence of opinion, expressed or implied, that, under certain circumstances and conditions, cholera is liable to be communicated from person to person; the liability being usually in proportion to the crowd-

ing of many persons together, the defective ventilation of apartments, and the neglect of thorough cleanliness in respect of person or abode.

In addition to the possible risk of the extension of the disease from this source, the alarming character of the symptoms, and the necessity for unremitting attendance upon the sufferers, are calculated to produce terror in the minds of spectators, and thus strongly predispose them to be attacked during an epidemic season.

For these reasons, the opinion is very generally held that it is unadvisable that cholera patients should be admitted into wards which are occupied by other sick inmates.

The experience, however, of some of the metropolitan hospitals in past epidemics, shows that, due attention being paid to sanitary arrangements, cholera patients may be received, in limited numbers, into the general wards without injurious results either in the other sick or to the ordinary attendants.

No instances have been referred to, in the evidence before the Council, in the opposite direction, *viz.:*—of the disease having spread to the other inmates of a ward in a well-regulated hospital.

II. With respect to the second query, the experience of the metropolitan physicians who have favored the Council with replies, appear to be that, with proper precautions, cholera patients may be admitted into separate wards in general hospitals or infirmaries without undue risk of the extension of the malady to the other inmates of the institution.

This opinion is shared by all the respondents who have had experience of the disease in tropical countries.

It would have been very desirable to have been informed of the results on this point, in some of the military and naval hospitals in this country and also abroad.

The precautions above referred to are these:—(*a*) Ample space to each patient; not less than 1500 or 2000 cubic feet. (*b*) Thorough ventilation of the wards at all times, both night and day. (*c*) Immediate disinfection and removal of the excreta, soiled linen, etc. (*d*) A separate staff of nurses.

III. The reply to the third query depends much on the opinion formed in respect of the two former questions. If cholera patients are not admissible into general hospitals or infirmaries under any conditions, it is obvious that some extemporized and special arrangements must be provided for the reception of the destitute when attacked.

But even when they are admitted, there are various circum-

stances in which it will be advisable or necessary that special hospitals should be provided, *e.g.* (*a*) When general hospitals or infirmaries are at a distance from the seat of the actual or apprehended outbreak. (*b*) When there is a want of accommodation, with due regard to the ordinary patients, or when the accommodation is unsuitable or objectionable.

In selecting the site of special hospitals, the following points require to be attended to:—(*a*) Nearness, if possible, to the chief seat or seats of the outbreak. It is important that cholera patients should not have to be carried far. There is, moreover, great risk in moving patients in, or verging to, the state of collapse (*b*) Airiness, and freedom from intrinsic or contiguous sources of atmospheric pollution. (*c*) A dry soil and raised situations are, of course, always to be preferred to a low and damp one.

Amid the crowded districts of a large town, it appears preferable that several small and suitable hospitals, or "houses of recovery," should, if possible, be established in different localities, rather than one or two large hospitals for the reception of a large number of cholera patients.

The remark that the presence of an experienced staff of medical officers in general hospitals, and the existence of more complete appliances of every sort in them than is likely to be provided in extemporized special hospitals for the treatment of cholera patients, are marked advantages in favor of the former, deserve consideration.

The general conclusions of the Council are these:—

1. That it is, on the whole, unadvisable that cholera patients be admitted into the ordinary wards of general hospitals or infirmaries.

2. That cholera patients can be safely admitted into special wards in general hospitals, due precautions being taken; and therefore, that it is desirable, as an important means of providing accommodation for the destitute when attacked, that the authorities of these institutions grant this valuable benefit to the public.

3. That it will be often necessary that special hospitals be provided in aid or in lieu of general hospitals and infirmaries.

In addition to these arrangements for the accommodation of the poor when attacked with cholera, the Council would recommend that places of refuge be provided for the temporary sojourn of some of the unattacked inmates of unwholesome dwellings and localities where the disease has appeared.—*Lancet*, July 28, 1866.

VALUE OF SEWAGE.—The Reclamation Company, now actively engaged on the north side of the Thames, has already tested the value of the metropolitan sewage, and contemplates its regular and systematic utilization on a farm which the company is about to purchase.

We give the following details, as the result of its first labors, which, whether viewed in a sanitary or commercial light, we take to be of the highest importance. Early in April last, a plot of waste land at Barking Creek, devoid of surface soil, was covered with common sand, brought from Mappling, near Shoeburyness, to the extent of two feet thick, on which was sown grass seed. The surface was then well irrigated with ordinary London sewage from the northern outfall. This has been repeated once or twice. The effects of this *manufacture of green meat*—for such, indeed, it may be most justly considered—has been the production of *three crops;* one cut in June and July, at the rate of sixteen tons per acre; a second, of eight tons; and a third now growing, and almost ready for the scythe! This illustration of the value of what we have for generations cast into our rivers as waste, almost surpasses belief, and, at any rate, ought to engage the serious attention, as it is now doing, of all practical economists.—*Lancet*, Sept. 8, 1866.

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THE

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N. S. DAVIS, M.D., Editor.

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Original Contributions.

ARTICLE XLII.

CEREBRO-SPINAL MENINGITIS.

By F. R. PAYNE, M.D., Marshall, Ill.

Read to the Illinois State Medical Society, June, 1866.

It would afford me great pleasure to meet with you on the 5th of June, 1866, but circumstances render it impossible for me to do so. We have, in this county, had three years of sad experience of the *epidemic* prevalence of "spotted fever." During this time, we have learned some practical facts relating to this dreadful epidemic. We may have sporadic cases of this disease, and the results of our observations are, that they are generally curable. In the last 24 years, we have had three terrible epidemics in this county, and, in my opinion, they have all been, pathologically, identically the same, the only difference being in the premonitory symptoms. This year, we have carefully noted, at the bedside, the symptoms of *epidemic* cerebro-spinal meningitis, and in all cases where death does not result in a few hours we have two stages.

First Stage.—Congestion, not a well-marked chill, but tremor; surface cold, and, in nearly every case, pulse not perceptible at the wrist; the skin an ash or lead color; excruciating pain in head and back of neck; restlessness and vomiting, with a tremulous sensation in the epigastrium; the entire surface of

the body very sensitive, but often we *early* have paralysis of one or more of the extremities. If reaction is not established in a few hours, we have loss of sight and hearing; stiffness of muscles of neck; local spasms, with a flexed rigidity of fingers and toes of one or both sides of the body. If these symptoms continue for six to twelve hours, we have cessation of respiration. In the *genuine epidemic*, if we are called promptly, and succeed in establishing reaction, we soon have a new train of symptoms, which we denominate

Second Stage.—We now have a quick, hard, small pulse; suffused eyes; the neck rigid, and more or less opisthotonos; great restlessness and jactitation; in many cases, petechiæ on limbs or body; bowels constipated, and in many cases impossible deglutition; and complete coma. The pupils of the eyes in this stage begin to contract, but if the patient lives three or four days, we have permanent dilatation. These symptoms are magnified by the upright position. In the first stage, the pupils will dilate and contract without an effort to produce this change: in the second stage, one or both pupils are permanently dilated and are not influenced by exposure to intense light.

This epidemic has prevailed in Clark County for three years, but in no locality longer than four to six months; and it is positively certain that the disease is migratory. The first cases were at York and Darwin, 10 and 20 miles south of this point. These cases occurred in 1863–64, and many died. In November, 1864, the terror of the disease was felt in this place, and none but an occasional *sporadic* case was known to exist in the localities of Darwin or York. In the spring of 1866, the epidemic reached the northern part of this county, some 10 and 15 miles north of town, and we had no cases in Marshall or vicinity. We have carefully noted the condition of the atmosphere in the localities where the disease prevails. Four or five days prior to the outbreak of the epidemic last spring, north of Marshall, we had damp, foggy weather. This was also true in this locality when the disease prevailed.

We have, in this malady, congestion and depression, indicat-

ing some toxic agent in the blood which seems to have an elective affinity for the brain and spinal marrow. The vitality of the blood is destroyed and rapidly disorganized, and the vessels of the brain and spinal marrow seem to lose their contractility. If this is true, we have a specific poison at work, and nothing but *elimination* or *neutralization* will stop the mischief.

In 1845–46, we had a terrible epidemic in this county, called "black tongue." This disease first made its appearance in the form of ordinary erysipelas, but in a few days extended through the mucous membranes to internal parts; then we had depression, congestion, delirium, and all the symptoms now found in spotted fever.

In 1858, a similar and fatal epidemic prevailed, which we denominated *erysipelas of the brain.* The symptoms in this disease were nearly the same as are now found in "spotted fever."

It is the opinion of JOSEPH KLAPP, M.D., and many other medical men, that the poison is the same as that of *erysipelas;* and the facts here presented surely favor that idea. Prof. N. S. DAVIS says:—"There is not only a close analogy, but a positive relation between erysipelas and epidemic cerebro-spinal meningitis, or spotted fever; the two diseases having often prevailed together in the same community, and in members of the same family." Prof. DAVIS is one of the ablest practical physicians in the North-west, and his observations are worthy of the highest consideration. We are, and may long remain, ignorant of the primary essential or specific cause of this disease, but, in our opinion, the pathological condition is abundantly obvious. Prof. N. S. DAVIS truly and forcibly says:—"the practitioner who stands by, watching his patient laboring under a severe attack of this disease, and sees the rapidity with which the nervous, vascular, and secretory functions all fail, as indicated by the muscular rigidity and delirium, passing into paralysis and coma; by the universal capillary congestion and frequent appearance of purple spots; by the suspension of important secretions; and by the rapid development of sero-purulent infiltrations and effusions wherever local hyperæmia or inflammation exists, will not fail to recognize a profound

alteration of the relations of affinities between the ingredients of the blood and the organized structures of the body."

If our pathological position is true, all must admit the necessity of a prompt resort to some medicinal agent that will arrest this septic or degenerative tendency. If this is not speedily accomplished, death is positively certain. In the first stage, if we have an *epidemic case*, we must, in some way, procure reaction; if not, our patient dies in a few hours—they are blue, cold, pulseless, and die in from six to twelve hours. I know of no better remedies to meet this indication, than hot rocks, mustard to the spine, rub with pepper and whiskey, and use with caution brandy internally, and, at the same time, resort promptly to the use of antiseptics, the most reliable of which are the arsenites and permanganates. The most valuable are the arsenite of potassa and permanganate. It is also true, that in the treatment of erysipelas the profession is almost unanimously favorable to tinct. ferri chlor. Dr. Joseph Klapp, in the *Medical & Surgical Reporter*, April 30th, 1864, states that he has successfully treated many cases of this disease by giving 20 drops of mur. tinct. ferri every two hours, until the cerebral symptoms began to give way, and then he added 1 gr. sulph. quinine, as a tonic, to each dose; generous diet, milk-punch, if necessary, and perfect rest of body and mind, requiring in all cases the recumbent position. Dr. Klapp says the following liniment will relieve the distressed feeling at the back of the head:—

℞. Tinct. Aconite Rad.,----------
Tinct. Opii, ----------āā f℥ss
Sapon. Comp.,---------- f℥iij

Ft. Liniment.

With this treatment, he says, "I have relieved some distressing cases."

The history of the epidemic in this county is, that when it first appeared in a locality it was much more fatal than it was after the disease had prevailed for some three or four weeks, and in some localities it has been more virulent than in others. It is also true, that it selects for its victims persons between

the ages of 2 and 15 years. The territory in which the disease prevailed, did not, each year, comprise over one township. The march of this epidemic atmosphere has, thus far, been north and a little west. If its future progress is in accordance with that of the last three years, the disease will reach Grandview, Edgar Co., in the spring of 1867. When this dreaded malady first appears in a neighborhood in an *epidemic form*, three-fourths of all the *genuine* cases will die. In ten or twelve days after the breaking out of the disease, more than half the cases will be relieved with the treatment above indicated. The permanganate of potassa or the arsenite of potassa ought to be given from the inception of the disease, and in localities where intermittents prevail, we prefer the latter, that is Fowler's solution, 3 to 5 drops every four hours; we also use tinct. ferri chlor. in 10 to 20 drop doses.

Last spring, in one family, we had four well-marked cases. One, a stout, hearty man, died in eight hours after first symptoms made their appearance; two got well; the other, a young lady, lived eight weeks, with complete paralysis of the inferior extremities. More than half of this time her appetite was good; bowels regular; no fever; tongue clean, but the recuperative powers of the system failed to restore health, and she died. The pathology was well-marked, consisting in a highly pyæmic or septic condition of the blood, with visible perverted vital affinity.

We freely confess that our treatment in *epidemic* "spotted fever" is not satisfactory, but we hope the medical profession will soon present medicinal agents which will vitalize the blood and enable us to arrest that terrible septic and degenerative tendency.

My object in presenting this paper to your Society, is to elicit discussion, and thus secure to the profession all important pathological and practical facts which will in future enable us to better control this terrific malady.

ARTICLE XLIII.

BROMINE AND ITS COMPOUNDS.

By J. H. HOLLISTER, M.D., and Prof. Chicago Med. College, Chicago.

Read to the Illinois State Medical Society, June, 1866.

At our last annual meeting, I proposed to prepare for consideration, an article upon "Bromine and its Compounds, as Curative Agents;" for, though at that time considerable interest had been excited with reference to its use, especially in our military hospitals, yet but little had been written upon the subject, and researches with reference to its literature were extremely unsatisfactory. *Since* then, however, the journals, almost without exception, have made abundant reference to it, and much that I then intended to express has been already anticipated, rendering it almost superfluous that I should complete the article as I had intended. Still, rather than fail of discharging the duty of preparing a report as ordered, as, too often, has been the case with our standing and special committees, I shall venture to present views and facts with which you may already be familiar, with the hope of eliciting additional knowledge from those who have had more abundant facilities for its trial and knowledge of its virtues. I deem a just estimate of its curative powers very essential to the interests of humanity: at the same time, I should consider its over estimate an equal misfortune, as, from being to sanguine of its power, disappointment might even deny for it the value which it may justly claim. Now, that the attention of the profession is so fully turned to it, I believe that men of acknowledged ability will soon assign for it a just place and proper estimate, as a remedial agent, and that it will render to us a much more essential service in the healing art than it has hitherto done.

I. Its natural history, in brief, is this:—Bromine was first discovered by BALARD, in 1826. He obtained it from that portion of sea water from which common salt had been crystalized, and it was first named by him "*muride*," from "*muria*," *brine*. When GAY LUSSAC took it in hand for examination, he con-

ceived it to be the sum total and aggregate of all villainous stinks, and persuaded BALARD to call it "*brome*," or bromine, from the Greek "*bromos*," *the stink*. Neither of these men being familiar with the Chicago River, they deemed the bantling justly named.

So strong are its affinities, that it is never found in a free state, but, in various combinations, may be derived from both the mineral and organic kingdoms. In the organic world, it is obtained from many of the marine plants of the Mediterranean, in the stony concretions of sea sponge, and, especially is it to be noted, as one of the constituent elements of "*cod liver oil*." Its inorganic combinations are too numerous to mention. In the waters of the Mediterranean, the Baltic, and the Dead Sea, and in very many of the salt springs of the old and new world, it is found in greater or less abundance. The German springs of Kreusnach are especially rich in it, and from this source it was formerly mainly obtained. More recently, it has been found in the salt springs of Salina; and in still greater abundance, so as now to mainly furnish the market, from the salt springs in Pennsylvania. Its main combinations in these waters are with calcium and magnesium. Of the manner of its preparation, I shall not speak.

II. *Physical Properties.*—Bromine, in its pure state, is an exceedingly volatile liquid; of a dark red color; pungent odor; acrid taste; boils at a temperature of 117° Fahrenheit, and solidifies at 4°; is not combustible; does not support combustion; immediately extinguishes a taper thrust into its vapor; is most soluble in ether; a powerful bleaching agent; colors the skin yellow, when in contact, as does nitric acid; and has a specific gravity nearly three times that of water.

III. *Forms of Administration.*—It has been highly recommended by Dr. M. GOLDSMITH and his associates, in the form of solutions of various strength, from 20 to 40 drops of bromine to the ounce of alcohol or ether; and still later, they advise its external application in its full strength. Internally, it is most frequently administered in the forms of bromides of potash and ammonia. Its vapor diffused through the air is, also, one form of its use.

IV. *Physiological Effects.*—The very concurrent testimony of a number of observers is to the effect, that bromine has a *decided sedative influence* upon the *cerebro-spinal nervous centres*, and that, as a result of such impression, its free use is followed by diminished action of the heart and general circulation, lessening the special sensibility of particular portions of the system, and exerting a happy, tranquilizing influence in cases of excessive reflex excitability.

V. *The Diseases in which its Use is Indicated.*—Its physiological effects are not so decided but that they may be easily modified or controlled by serious structural disease, or morbid processes going on in the system. The cases in which most benefit is derived from its internal use, are those in which functional derangement, rather than organic disease, is present. Its very beneficial effects in certain forms of insomnia have been noted by several writers, and I have to add my own observation in several marked cases, in which a nervous, wakeful condition was well controlled in persons where opium was not well borne, and with none of its unpleasant sequences. Acting upon the suggestion of BROWN-SEQUARD, who has spoken very decidedly in its praise, Mr. HENRY BEHREND, an eminent English practitioner, commenced the use of bromide of potash in 1864, in cases of insomnia and restlessness, dependent upon nervous excitement and irritability. He cites several cases, where business men, by a severe overtaxing of their mental powers, were wholly unable to procure tranquil sleep. His prescription, in the instances cited, was 25 grs. of the bromide of potash three times a-day, dissolved in a little cold water, and with the happiest effects. Several of my associates have given me a like assurance of its beneficial influence as a sedative, and often very happily meeting the want where opium was not tolerated, and where valerian and other anti-spasmodics had failed.

Unhappily, the habits of our American people are such, that, for our overworked business men, for our overtasked children in schools, for our enervated females, who become morbidly sensitive mothers, a remedy like this seems especially needed, and it may be said in praise of this salt of potash, that, while

it is a decided nervous sedative, it does not at all impair digestion, it does not constipate the bowels, and tends rather to allay than promote irritation of the urinary organs.

The dose for its sedative effect, in cases now alluded to, may vary from 15 grs. to 30, in solution, three times a-day. BROWN-SEQUARD assures us that he has given it in drachm doses, for several consecutive weeks, without any deleterious effect. As might be anticipated, it has already been very fully tried in *epilepsy*. Dr. WILKS, of Guy's Hospital, cites two cases, in which the exhibition of 5 grs. of the potash, three times a-day, was followed by recovery, when the ordinary remedies had failed.

His theory is this:—That in those cases there was local affection of bone or membrane, and that the remedy relieves by its absorbent power. I think it more probable, that the primary and favorable effect is upon the *nerve* tissue, diminishing its irritability, or else the iodide of potash, which is more potent as a stimulant to absorption, would act with superior energy and success, which is *not* the case. Dr. RODGERS, physician to West London Hospital, has recently tested its use in this disease, with very favorable results. He directs 15 to 20 grs. three times a-day, and has relieved, entirely, several cases that had baffled all previous effort. He dwells specially upon its *use* in epilepsy induced by excessive masturbation, one case, very severe in its development, yielding to a continued use of 25 grs. three times a-day, for several months.

A friend of mine related a case that had excited a good deal of interest in Boston recently, where physicians had failed to relieve a patient of most distressing pain in the cervical portion of the spinal cord, and which BROWN-SEQUARD controlled almost immediately by the administration of 20 grs. of bromide potash, administered three times a-day, and continuing its use during several weeks.

I have tested the use of bromide of potash, recently, in a case of tetanus, but without appreciable benefit; the case passing rapidly to a fatal termination, the exciting cause, whatever it may have been, brooking no restraint. Yet, in both these

diseases, I am disposed to trust more to the use of bromine than to all other remedies.

One of its special effects is upon the nervous distribution to the upper portion of the respiratory tract. Hence, several papers have made their appearance upon its use in spasmodic affections of the larynx and bronchi. In spasmodic asthma, it has been spoken of with favor. In spasmodic croup, where there is a proclivity to its frequent return, I believe the tendency may be, in many instances, broken up by its judicious and timely use.

Whooping-cough is another affection, over which it exerts a very perceptible influence, and to its use in this disease, I invoke your careful consideration. Dr. GIBBS, of Westminster Hospital, London, reports a list of cases of this affection treated with bromide of ammonia. Not all were relieved. Those with spasmodic cough, however, were almost uniformly cured of the whoop; but, in proportion, as catarrhal symptoms were present, it failed to afford prompt relief. To infants, he administered from 3 to 5 grs. in solution three times a-day, increasing the dose to 4 and 8 grs. in the cases of older children

This drug is found also to produce a decided anæsthetic effect upon the genito-urinary passages. I have tested its effects upon irritation of the male urethra, and upon the genital irritation inducing nocturnal emissions, and have succeeded with this better than with any other remedy. A colleague cites a case of long-standing, habitual seminal emission, cured by the use of 20 grs. of bromide of potash three times a-day, its use being continued for a number of weeks.

Dr. DEBOUT, a French writer, cites a remarkable case of stricture of the urethra, so irritable that it was found impossible to dilate it in the ordinary manner, with bougies, and attended with excessive febrile excitement. He made use of a drachm, daily, of the bromide of potash, and succeeded beyond his most sanguine expectation; for, he says, as soon as the bromide had taken effect, the catheter could be introduced with greater and greater dimension, without any unfavorable effect. In this case, its hypnotic effect was very remarkable, for, al-

though the patient had been almost sleepless for weeks previous, when only a half drachm had been administered, he obtained a good night's rest. In cases of irritability of the bladder, it has been equally successful. In some cases, its use has been discontinued from its excessive somnolent power, inducing too profound and prolonged sleep. Where there exists a morbidly sensitive condition of the mucous membrane of the genital organs, I think this remedy will be found to act very kindly, and, in the instances which have come under my notice, quite efficiently. It will be found serviceable in allaying the congestion and excitability of the genital organs of those habituated to masturbation, and may well be prescribed for its local sedative effect, during the period that the unfortunate victim is endeavoring to rid himself of the habit. I tried, in several cases, the use of bromide of potash in this morbid condition of the genital organs, where produced by nocturnal emissions, in doses of 3 to 5 grs. three times a-day, but failed of any satisfactory results till I had increased the dose to 15 and 20 grs. given at the same intervals. I anticipate that where there has been developed in these organs decided inflammatory action, the drug will, in a measure, fail to meet our desire; but in the case of decided local inflammation of the part, I still believe the exalted sensibility will be in a good degree controlled, and that this effect will favor recovery.

In all these cases, whether of epilepsy, tetanus, whooping-cough, bronchial irritability, or excitement of the genito-urinary organs, those cases are most favorably affected, where the patient is in a moderately sthenic condition; and, indeed, it will be found beneficial sometimes to sustain with decided tonic treatment at the same time that bromine is used for its tranquilizing effect. Several cases of extreme prostration and wakefulness were well relieved by the use of $\frac{1}{20}$ gr. of strychnine administered three times a-day, at mealtime, followed by 20 grs. of the bromide at bedtime. In all cases where it is administered to persons who are *enfeebled*, I think special care should be taken to support at the same time by appropriate tonics.

I pass, lastly, to consider its external use as a disinfectant and as an escharotic. The testimony of Surgeon WOODWARD, 22d Reg't Ill. Volunteers, to Surgeon GOLDSMITH, is very decisive, as to the effects of the vapor of bromine in wards devoted to the treatment of erysipelas. Others speak so decidedly in its praise when used in its volatile form to prevent the contagious effects of erysipelas, that I confess a desire to see their experiences more fully verified, and if the half is true which is asserted of it, we may well rank it next to chloroform—the second best of God's gifts to surgery. I am disposed fully to test it, by liberating a moderate amount of its vapor in all confined rooms where contagious or even pernicious diseases are to be treated, with the view of determining to what extent it has power to neutralize the *miasm* which is productive of contagion.

Finally, its use is recommended in the strongest terms by Surgeon GOLDSMITH, his hospital-assistants, and others, as an escharotic. The strong affinity which it has for the elements of the tissues causes it to act upon them in a similar manner to nitric acid; but it is found superior to the latter from the perfect neutralizing effect which it exerts upon the poison producing hospital gangrene. It has seemed, in many instances, an absolute specific against the ravages of this disease, controlling the progress of the sloughing, and changing the wound to the condition of a healthy ulcer in which, granulations springing up readily, the recovery was rapid. Of the manner in which it exerts its beneficial effect, both upon living and decomposing molecules, I am not able to speak; but the fact remains, that, when in its full strength, the solution of bromine has been applied to a gangrenous ulcer or wound, the peculiar *fetor* disappears, the rapid decomposition of tissue is arrested, the wound soon puts on favorable appearances, the patient demands food, improves in strength, and soon rallies from his critical condition. Of course there are numerous modifying influences which may prevent its favorable effects, but, so far as the local poison which developes and propagates hospital gangrene is concerned, it is asserted, upon reliable authority, to neutralize it promptly by a single thorough application, and that thereafter the wound

is to be esteemed and treated as of *non*-malignant character. How fully the experience of the great body of army surgeons is confirmatory of the strong assurances of Surgeon GOLDSMITH upon this point, I am unable to say; but I close the paper at this point, to solicit from those who may have given it a full and impartial trial the result of their experience, as an external application in the prevention of erysipelas and in the cure of gangrene.

Two queries present themselves, which I will not withhold. The one is:—May not the presence of bromine with *iodine* in cod liver oil give to it an efficiency not possessed by any of its artificial imitations? The other:—May not bromine found in most of our saline and some of our chalybeate springs have given to them a more decided curative power than we have been wont to ascribe to medicinal springs?

With caution, that we do not anticipate too much from bromine as a curative agent, remembering that its action may be easily modified or entirely controlled by strong disturbing influences, as in acute disease, still I think it well for us to test, patiently and carefully, its effects upon the human economy; and I feel confident that in many instances, in the diseases before mentioned and perhaps others, we shall find in it a remedy which all must acknowledge to be essentially needed in the treatment of disease.

ARTICLE XLIV.

ON THE THERAPEUTIC USES OF BROMIDE OF AMMONIUM.

BY IRA HATCH, M.D., Chicago, Ill.

Read to the Illinois State Medical Society, June, 1866.

Soon after Dr. GIBBS' notice of this article, in the *London Lancet*, April, 1863, I commenced using it in various nervous affections connected with diseased and irritated mucous membranes, and in epilepsy. The effects were so striking, in some

instances, that I have thought the record might be useful to the profession.

Case I. Mrs. Eliza Gould, of Chicago, *æt.* 40. Chronic bronchitis, complicated with derangement of the liver and digestive organs. She had been subject to severe attacks of sick headache, violent vomiting, and palpitation of the heart. During these attacks, the difficulty of breathing was most distressing. Alarming fainting fits would precede each attack of vomiting, and dizziness, blindness, and numbness of the hands and feet would follow. Frequently, one or both sides would be paralyzed for several hours after these attacks. At one time, the paralysis of the right side lasted three weeks, but gradually wore off under the use of frictions to the spine and nux vomica internally; but it left her nervous, irritable, and extremely restless. There was more or less uterine irritation. She had never borne children. The throat and back part of the tongue had the appearance of fungous granulations. In order to allay nervous irritation, I gave her bromide of ammonium, in moderate doses, three times per day. It relieved the nervous irritation at once. She slept better; was more cheerful and comfortable when awake; she coughed less, and complained less of numbness of the extremities; and, was far less apprehensive of approaching danger. In short, the sedative effects of the remedy were very strongly marked.

Case II. Mrs. Mary E., of Chicago, *æt.* 39. Uterine irritation and leucorrhœa. This woman had been married 15 years; had never borne children: was of a nervous temperament; and had been always a victim of dysmenorrhœa, leucorrhœa, and dyspepsia, which latter complaint had become, latterly, much aggravated, being attended by vomiting and other unequivocal symptoms of pregnancy. In March, 1864, the seventh month of her pregnancy, she had whooping-cough, which was so severe that it brought on premature labor. Her labor, as well might be expected, was tedious and painful, and her recovery slow and unsatisfactory. She lost her appetite; became excessively nervous; had fainting fits of a hysterical character; and laughed and cried in the same breath. She would not be left

alone a moment, for fear of dying. Yet, she had no fever; her pulse, respiration, and skin natural; she had no tenderness of the abdomen, but the bowels were obstinately costive—every evacuation prostrated her and aggravated all her nervous symptoms. She did not bear opium well, and nervines were of no account. I had noticed, during her labor, that the os uteri was extremely sensitive, and this led me to attribute her tedious convalescence to uterine irritation. She was put upon the use of bromide of ammonium, in 4 gr. doses every six hours. The effect was most gratifying. She slept quietly the first night, which she had not done during her confinement; she had no more fainting fits or palpitation, and made a quick and perfect recovery. The bromide relieved the constipation, she has enjoyed good health since, and has had no dysmenorrhœa.

CASE III. Epilepsy. Jennie Warren, of Chicago, *æt.* 7. She had averaged three fits daily for nearly six years; had become extremely sensitive and irritable; recoiled at every touch, and started at every sound. Her memory was much impaired, and her countenance had an idiotic expression; her gait was unsteady, and the left arm was drawn out of shape and partially paralyzed. This case was certainly very unpromising. Her parents had ceased making any efforts in her behalf, having been repeatedly told that the case was hopeless. Being in attendance upon another child in the family, I casually made the remark that I would try the bromide of ammonium, as I had lately seen it recommended by high authority. The mother caught at the suggestion, and immediately commenced the use of it, in doses as large as the stomach would bear without vomiting, three times per day. She took the remedy about fourteen months in all, and has not had a fit for nearly two years. The convulsions began immediately to abate, both in frequency and severity; she recovered her consciousness much sooner after each fit, and soon became less fretful and sensitive. In less than a week, her mother, who watched her with intense anxiety, became satisfied that there was an improvement in the general appearance of her child, and persevered in the use of the medicine with a zeal and determination worthy of the cause.

She did not, like many parents, expect and demand too much at once; although the fits continued, she did not drop the remedy, but felt confident of ultimate success. The fits were brought on several times by indigestion. With a nurse less observing and less persevering, we should have failed of success, and the bromide, as in other unskilful or unfaithful hands, would have lost its credit.

I am satisfied that this remedy not only calms the irritability of the nervous centres, but it allays the irritation of the nervous extremities, thus removing both the predisposing and exciting causes of epilepsy. It strengthens the machinery and at the same time lessens the friction. The child is apparently cured of a most formidable disease of long standing; the morbid connexion between the irritability of the digestive organs and the excitable cerebro-spinal axis seems to be broken up; the effects of the friction of an irritable mucous membrane acting upon a sensitive nervous system seem to have yielded to the soothing effects of the bromide of ammonium. Epilepsy, arising from some organic lesion of the spinal centre, without any eccentric or outside irritation, would, most likely, be incurable. But these cases are probably very rare. Most cases evidently arise, at first, from outside irritation applied to the extremities of the nerves, which irritation is carried up to the centres and constantly accumulates there, till it explodes or culminates in a convulsion.

Case IV. Epilepsy. Miss Hannah F., Chicago., *æt.* 16. This patient is now under treatment, having recently had a fit. She has a nervous temperament; is naturally irritable; had convulsions in infancy; and had an aunt die with epilepsy. The nervous centres are weak and excitable. There is, in her case, a strong hereditary predisposition to epilepsy. The exciting cause of the convulsions, in every instance, has been disturbed indigestion. Constipation, yellow skin, nausea, and pain in the epigastrium have been the usual precursors of a convulsion. She becomes forgetful, flighty, peevish, and melancholy before a convulsion. These latter symptoms have always been controlled, and the fit prevented, by the bromide,

when properly attended to. Twice, within the last six months, the treatment has been neglected, and, under excitement, the fits have occurred. The first was under the excitement of a Christmas tree, at home; and the second, recently, was under the excitement of a strawberry festival. This case will probably recover by close attention to the digestive organs, and by controlling nervous excitement by the bromide. The convulsions do not seem to be influenced by the menses, which are not disturbed. It is remarkable how soon the premonitory symptoms of a convulsion will yield under the influence of this potent remedy.

CASE V. Epilepsy. George Beers, Chicago. *æt.* 11. This lad had epileptic fits about six years. At first, they were very mild, they seemed to be mere aura epileptica, and occurred not oftener than once a-month; but they gradually increased in force and frequency, until they became very severe and often repeated. He was under homœopathic treatment four or five years, and tried various quack remedies, always with injury. His father paid a quack, in Cincinnati, one hundred dollars to cure him, who nearly killed him. In this condition, he came under my care. He was of a lymphatic temperament, with scrofulous tendencies. He was put upon the use of cod liver oil and iron, and the fits were controlled by the bromide of ammonium in 10 gr. doses, three times per day. This was in June, 1865. The fits gradually lessened in violence and frequency till the 1st of September, since which time he has had none. The alteration and improvement in his countenance and intellectual faculties are most striking. He now seems to be entirely cured. This case and that of the Warren girl, are two of the most remarkable triumphs in medicine; as gratifying to the profession as they were mortifying to quackery and empiricism. I have two other cases of epilepsy under treatment, with every prospect of success, but, as the convulsions occur occasionally, I do not report them at this time.

CASE VI. Metro-gonorrhœa. Miss R., *æt.* 21. A young scamp had given her gonorrhœa, and attempted to cure it by injections of tr. mur. iron, and had produced a severe inflamma-

tion of all the organs of generation, involving also the urethra and the neck of the bladder. These symptoms were combated by leeches and an active antiphlogistic course of treatment. The urgent symptoms yielded somewhat to this course, but the congestion and pain in the uterus, together with the gonorrhœal discharge, continued. Some of the usual anti-gonorrhœal remedies were tried, but the stomach, which was very irritable, rejected them all. The patient was excessively nervous and scarcely slept at all. With a view simply to make her sleep, which narcotics failed to do, I gave her 15 gr. doses of bromide of ammonium every four hours. She slept soundly the first night; the pain and swelling of the uterus gradually yielded; and she recovered entirely, without any other medicine. It not only relieved the gonorrhœa, but the irritation of the stomach quickly subsided, and the appetite returned.

I have used the bromides of potassium and ammonium, in a great variety of minor cases, to allay irritation and procure sleep in children, and generally with satisfactory results.

Note.—Cases I. and II. have been published in the Chicago Medical Examiner.

ARTICLE XLV.

CARCINOMA.—DEATH FROM ULCERATION AND PERFORATION OF THE STOMACH WITHOUT TENDERNESS OR PAIN.

By A. GIVEN, M.D., Louisville, Ky.

Mr. J. C., aged 63 years, was the oldest pilot on the Ohio River, and a man of robust constitution, weighing 260 pounds, previous to his last illness. During his last trip up the river, the latter part of February, 1866, he was taken with remittent fever, which, after arriving in this city, assumed a typhoid form with thin and watery stools. By the 1st of April, he was convaleseing, diarrhœa checked, and appetite returned. He then went into the country to spend a few weeks, and, while there,

his bowels became costive and refused to act, although some of the most powerful cathartics had been used. He now began to vomit. An enema was given, which procured a large stool. The injections had to be repeated from time to time to insure an operation, fer the most active cathartics had no effect on the bowels. Since his death, which occurred on the 25th of September, I received a letter from Dr. G. H. HALL, of Bitter Water, Ky., in which he says:—

"I saw Mr. J. C. on the 14th of April, 1866, and found the following symptoms:—want of appetite, amounting almost to anorexia; obstinate constipation; conjunctiva of a yellowish tinge; inability to sleep; and a peculiar tingling sensation and formication in the forearms. There were no symptoms, and, certainly, at that time, no physical signs indicative of serious abnormal condition of the liver. There was not even the slightest uneasiness in any part of the right or left hypochondrium or in the epigastrium; he never complained a particle of his stomach, nor was there at that time or afterwards, while under my treatment, a single symptom, save the character of the fluids ejected from the stomach, to sustain a diagnosis of organic disease of that viscus; yet, everything indicated the utmost torpor of all the chylopoietic viscera, unattended, however, by the slightest uneasiness. There was great obscurity in the case. I advised him to return to the city, as he could not recover."

After returning to the city, he was treated by two physicians for habitual constipation and dyspepsia. I saw him, for the first time, on the 24th of July, and found him in the following condition:—Pulse 80 per minute and regular; tongue covered with a white fur, and moist; stomach and bowels slightly distended; appetite good; sleeps well; bowels had not moved for eight days; had acid eructations, and vomited every two or three days; there was no nausea or straining to vomit. I ordered an enema to be given, which procured a moderate-sized stool, with a large amount of flatus. I then examined the abdomen carefully, but found no pain or tenderness and no enlargement of the internal viscera. The eyes looked a little

jaundiced. The absence of pain, tenderness, fever, and the character of the vomiting left the diagnostic symptoms very obscure. Being pressed for my opinion, I stated it to be a case of chronic inflammation of the stomach and duodenum, with a thickening of the mucous membrane, and, probably, ulceration of one or both. With this view of the case, I applied my treatment accordingly. The vomiting and eructations were checked in a few days and three healthy stools (one on each alternate day) procured without cathartics or injections, after giving the second injection. He gained strength, so as to be able to leave the house, and continued to improve until the 27th of August, when he began to vomit again and complained of a slight burning sensation in the œsophagus and a tingling sensation of the soles of the feet and arms, spreading up to his thighs, shoulders, and sides of the tongue. His appetite and strength now began to fail. I gave an injection, but failed to procure an evacuation. Thinking that there might be an obstruction in the sigmoid flexure of the colon, I passed a tube high into the bowel and injected, but failed to procure any fæces. I then came to the conclusion that there had but little passed the duodenum. As he was very feeble, and medicine had no effect, I discontinued medicines and ordered him to have any nourishment he desired, and, as he was a habitual drinker, to allow him some weak brandy. He took no nourishment for five weeks, except a little coffee and bread. He had no evacuation from his bowels for five weeks, until the day previous to his death, when he had a healthy-looking stool. His pulse was regular up to this time, when it became slower and slower, until he died without a pain or struggle. He retained his mental faculties until the last. The last time I spoke to him, I asked him if he suffered any; he replied that he was perfectly easy.

The manner of his death and the character of his symptoms made it an interesting case. It was evident that he died from inanition, but the degree of morbid action in the alimentary canal sufficient to cut off or impair the great function of assimilation could not be determined by the outward symptoms. I obtained permission, and made a *post mortem* examination, as-

sisted by Drs. SUTTON, RONALD, and FOREMAN. We found the liver pale; the gall-bladder distended; the intestinal canal was empty and contracted; the duodenum and pyloric end of the stomach had a contracted feel; two inches from the pylorus, in the lesser curvature, the stomach was perforated. I laid open the stomach, and found the mucous membrane unhealthy and spotted; around the perforation the tissues were softened and easily broken down; near the pylorus, we found the tissues softened, ulcerated, and of a honeycomb appearance, exuding a thick, creamy pus; on the anterior wall, near the lesser curvature, we found an ulcer, oval in shape, two inches in diameter, with thickened borders, a concave, grayish, and indurated surface; at the pyloric pouch, we found a sinus, under which the peritoneal coat of the stomach (an inch in diameter) was thin and brown; the mucous membrane of the duodenum was reddened and thickened, so much so as to prevent the flow of bile through the duct, thereby causing the distension of the gall-bladder. The condition of the alimentary canal generally, and the stomach in particular, led us to suppose that the case before us was one of chronic inflammation and thickening of the tissues of the stomach, caused by excessive use of ardent spirits and high living; and arriving at that point when artificial stimulants could no longer arouse vital affinity of the parts, disintegration, softening, ulceration, and perforation of the stomach was the result. But we were, reluctantly, driven from this position by the microscope. Dr. J. W. BENSON, Prof. of Clinical Surgery in the University of Louisville, examined the stomach under the microscope, but failed to discover the cancer cells in the pus or internal tissues, but in the juice taken from a granular mass on the external coat, the cancer cells were very distinct.

The interesting points in this case are:—1st. The obscurity of the case, mildness of the symptoms, and the manner of his death. 2d. Was it a true hereditary cancer, whose germ lay dormant for 63 years in the system of one of the most robust and healthy men to be found, and aroused to action by alcohol; or was it created by the morbid action of the tissues, and nursed

by intemperate habits until a nucleus was formed, around which the disease was fully developed, independent of a hereditary diathesis?

ARTICLE XLVI.

POISONING BY STRYCHNINE.

By S. A. McWILLIAMS, A.M., M.D., Chicago.

On March 15th, 1866, Mr. T., married, of sanguine temperament, *æt.* 31, took 5 grs. strychnine, at 15 minutes before 1 o'clock A.M., with the intention of poisoning himself, on account of financial and family troubles, real or imaginary. Immediately after taking the poison, he felt a burning sensation in his stomach for about a minute, and then felt as if his blood grew cold. At 1 o'clock, he went to bed and soon fell asleep; at 2 o'clock, he vomited; at 2½ o'clock, he tried to get out of bed, but found himself too stiff to do so. Mr. S., with whom he was sleeping, gradually became conscious of an unusual tremulous motion of the spring-bed, and of the random spitting of his bed-fellow. Learning the cause of the trouble, upon inquiry, Mr. S. ran for a physician, and stated the cause of alarm. The writer reached the patient at 3½ o'clock, and found him having spasms, extensive, frequent, and severe, and, with each, a blowing of froth from his mouth. He lay upon his back; arms extending obliquely from his body; face flushed; perspiration rolling off him; pupils dilated widely; pulse 130 per minute; color of lips natural; no lividity of any part; complaining of stiffness of muscles and inability to move limbs; no pain in head; no vertigo; no tinnitus aurium; mind exceedingly clear and perfectly sensible. Some of the matter vomited and the articles used in preparing the potion were secured. A drachm of the tr. of cannabis indica was immediately given, and another in 5 minutes; then two similar doses at intervals of 10 minutes; afterwards, two such doses, at intervals of 15 minutes, with a rapid amelioration of the symptoms; the next drachm was given at 5 o'clock. The patient was now hopeful, talkative,

and cheerful. Slight spasms occurred at intervals of 5 minutes, with tremulous movements running through the system between. In consultation, it was now decided best to give only 15 drops of tr. of cannabis indica, at intervals of an hour.

At 6½ o'clock, I went home, leaving my patient apparently out of danger, but was again hastily summoned, at 8½ o'clock, to find him, to every appearance, in a worse condition than at first. Soon after I left, he had vomited copiously. Two drachms of his previous medicine were immediately given him, and in 10 minutes after, a drachm of tr. of camphor.

I requested Dr. N. S. Davis to see the patient with me. He did so at 9 o'clock, and advised that drachm doses of the tr. of cannabis indica and tr. of camphor be alternated at intervals of 15 minutes, and, as his symptoms improved, to gradually lengthen the intervals.

From 8½ to 12 o'clock, the patient was slightly delirious; had spasmodic contraction of the muscles of the chest about four times in a minute, with a feeling of impending suffocation. At 10 o'clock, pupils less dilated; pulse 100. At 11 o'clock, pulse 90; a violent spasm occurred every 15 minutes, and about four thrills per minute running through the system. At 11½ o'clock, the patient vomited. At 12 o'clock, pulse 100; pupil as before; tongue coated; spasms rare and slight. Took a mouthful of water for the first. Lengthened interval between medicine to half-an-hour. Up to this time, there was increased sensitiveness to external impressions, so that the spasms, like electric shocks, would ensue upon the slightest causes, as the touching of the bed; contact of a spoon upon the lips; a sudden step; a jarring of the room, or slightest noise. About 1 o'clock P.M., he had two or three slight spasms at longer intervals. At 3½ o'clock, pulse 120; pupil natural, and continued so; lips dry; perspiration has ceased, but skin still moist; inclined to sleep; complains of soreness of muscles. At 5 o'clock, pulse 100; medicine as before. At 9 o'clock, pulse 100; lips dry; ordered toast-water; spasmodic contraction of chest gone; able to move arms comfortably; passed urine for the first. Half-drachm doses of medicine at intervals of half-an-hour, and

lengthen gradually to every hour. On the 16th, at 7 o'clock pulse 95; the lips were still dry; he had rested comfortably and slept some during the night; a half-drachm dose of the medicine ordered every 90 minutes; has lain in first position, on back, without any desire to turn on either side; ordered tablespoonful of gruel every half-hour. 11 o'clock, pulse 90; patient much brighter than in the morning; lips and skin natural; omitted camphor, and continued half-drachm doses of cannabis indica every two hours; directed a tablespoonful of soup and one of gruel every half-hour. 7 o'clock, pulse 80; tongue still coated; directed to give medicine at 9 P.M., 1 A.M., and 6 A.M., as bowels had not moved. On the 17th, at 7 A.M., pulse 70; slept well during the night; passed urine during the night and in the morning; appetite returning; medicine discontinued; toast and tea given; directed citrate of magnesia, until bowels should move, in doses of three fluid ounces, every three hours. 7 P.M., pulse 65; skin natural; bowels moved; appetite fair; sat up to have bed made. 18th, 2 P.M., patient up and dressed; slept well during the night; feels perfectly well, only very weak. Convalescence was uninterrupted.

Prof. F. Mahla kindly applied such tests to the suspected substances as left no doubt as to the poison being strychnine. The residue left in the tumbler was of an intensely bitter taste, and upon application of a small amount of concentrated sulphuric acid there was no change of color, but on the addition of a small piece of bichromate potassa a succession of colors ensued, gradually fading out—purple, blue, deep red, reddish brown, yellow, etc.

The muscles of the lower jaw in the above case were not affected, while in idiopathic or traumatic tetanus they are usually affected first. The violence of the shock to the nervous centres, in this case, seem to have blunted, to an extraordinary degree, their susceptibility to narcotic influence.

ARTICLE XLVII.

CAMPHORATED OIL (*Lin. Camphoræ, U.S.*) AND COTTON, AS A LOCAL APPLICATION IN ERYSIPELAS.

By B. H. CHENEY, M.D., Joliet, Ill.

Having, for some years past, been in the habit of using in erysipelas a local application at once simple, agreeable to the patient, and comparing favorably in my experience with any other, I venture to submit it to those of the profession who may not already have given it a trial. This is the *linimentum camphoræ* of the U.S. Dispensatory, commonly known as camphorated oil.

I should say, at the outset, that I by no means claim originality in the use of this application in the disease mentioned, for it is very probable that others may be in the habit of using the same. But in no medical work, to which I have access, can I find it alluded to, in the long catalogues of local applications in the treatment of erysipelas, nor am I aware that attention has ever been called to it through the medium of medical journals.

Although subscribing to the doctrine of WATSON, that erysipelas is an exanthematous fever, characterized by its peculiar eruption upon the face and head, and that similar affections of the skin simply, occurring elsewhere, are more properly erysipelatous inflammations, yet this is no reason for omitting all local treatment whatever, nor even for judging that local remedies are useless.

My practice in the use of this remedy is to saturate with the oil one side of a thin sheet of cotton-batting, of the required shape and size, and apply it to the affected part. I so cover all that portion of the skin invaded by the disease, and allow the cotton to extend to some distance beyond, over the sound skin. The whole of the face is frequently thus covered, the apertures being, of course, left for the mouth and nostrils. The cotton should be changed morning and night; and it is

well to throw the pieces which are removed at once into the fire, as one is then on the safe side of the question of contagion or the communicability of the disease from such a source. I am in the habit of having the fresh pieces of cotton all ready, and of applying them immediately as the others are removed, though I do not contend that this precaution is essential. The general or constitutional treatment is the usual one of diaphoretics and tonics, especially the tinct. ferri muriat., with such other remedies as may be called for by existing indications.

The general tendency of opinion among the leading minds in the profession, is, probably, to the belief that the question of local applications in this disease is, to a great extent, an indifferent one. But, even in this case, the camphorated oil has much, negatively, to recommend it over other and more disagreeable remedies. I have known individuals, whose sufferings from the repeated application of the tincture of iodine were great, the skin being irritated and smarting constantly. I am not prepared to say that the final result would have been materially altered by the use of the camphorated oil in these cases, but I am convinced that the iodine is in no way superior to the latter remedy in efficacy for the treatment of this disease, and the suffering was, therefore, wholly unnecessary.

There are those who fear to leave the beaten track, not so much from blind adherence to established usage, as from a commendable conscientiousness, lest, in so doing, they trifle with human life. For the satisfaction of such, who may be loth to trust a bad case without the tinct. of iodine or solution of nitrate of silver to arrest the progress of the disease, I will say that I have tested the use of the camphorated oil in cases of all grades and characters, from the mildest manifestation of the disease, to cases truly malignant, in military hospitals, and in private practice. The results under this treatment were remarkably favorable, compared with cases under other forms of treatment, or with any statistics, so far as I know.

Those, on the other hand, who regard the treatment of erysipelas as of some importance, and those who agree with EBERLE, that "there exists a close analogy between the inflam-

mation of erysipelas and that produced by a scald or slight burn," will observe that all the consequent indications are answered by the camphorated oil. The oil is soothing, the camphor a gentle stimulant to the inflamed surface, and the cotton effectually excludes air. To the latter power, that of excluding air, is probably due much of the efficacy of all local applications in this disease.

In cases of erysipelatous inflammation locally manifested elsewhere than the face and head, and especially where traumatic, the use of iodine, or some remedy more positive in its effects than the oil, seems to be called for. Whether there be the same difference existing between erysipelas proper and an erysipelatous inflammation, as is found, according to VIRCHOW,* between the latter and the ordinary exanthemata, or what lines of pathological distinction may be drawn between them, it is not my purpose or place here to inquire. But from the greater tendency in the local disease to suppuration in the subcutaneous areolar tissue, to gangrene, etc., it is evident that there is a strong local manifestation of the blood dyscrasy, and as the disease has no definite time to run, its course is more uncertain and calls for more vigorous local measures.

On the other hand, no local application whatever will stay the progress of erysipelas proper until the fever has run its course, any more than they will stay the progress of measles, scarlatina, or small-pox.

ARTICLE XLVIII.

A FEW PRACTICAL SUGGESTIONS ON THE MANAGEMENT OF CHRONIC ULCERS.

By R. DEXTER, M.D., of Chicago.

If an ulcer has become chronic, it is owing to a cause or causes that tend to subvert the reparative powers of the system, thus thwarting nature's efforts to heal the breach. These causes

* Virchow, Cell. Path., L. viii., p. 200.

may be local or constitutional, or both; in fact, there are few such sores but have a specific constitutional vice that sustains them. The first question then, regarding the pathology of chronic ulcers, is:—What morbid conditions have made them thus, and by what process has this result been accomplished? The next question is:—What are their precise conditions at the present time; and how much the constitutional fault complicates the local disease; and what are their mutual influences upon each other?

An ulcer has become chronic when it has passed through the ordinary acute stages attending such maladies, with the inflammation and its concomitant phenomena mitigated; and a tendency to assume a milder, but continued, condition of heat, redness, pain, and swelling; and influenced by causes that prevent normal granulation. For example, when from mechanical or chemical causes, a part has been injured and an ulceration established, in a person previously healthy, we get a common or simple ulcer, subject only to such differences as are produced by his temperament, age, occupation, previous habits, surgical dressings, etc. If, now, no untoward constitutional fault exists, with proper local and hygienic measures, we get a healthy sore with nice, clean margins, with numerous small, acuminated, florid, sensitive, and vascular granulations, and a rapid repair of lost parts. Again, take an ulcer of the leg, or, indeed, any other part, and assume that an anæmic condition, or that a scrofulous or other constitutional vice exists, or that a local cause, as a foreign substance or varicose veins, is exerting a deleterious influence, or that the patient has been subjected to injudicious treatment, and we have a chronic or complicated ulcer as the result. When, therefore, a chronic condition has become established in an ulcer, it is always complicated with some other malady. This complication may be *constitutional*, arising from debility or specific diseases; or *local*, resulting from undue inflammation; foreign substances, as pieces of wood, iron, or necrosed bone; or from varicose veins, mechanical influences, or maltreatment.

Debility acts by producing an aplastic exudation of lymph;

granulations imperfect, few in number, semi-translucent, tall, pale, and apices bulbous; discharge serous; margins indurated and elevated. This is a natural result of defective nutrition. The ulcer in this case becomes chronic, because the lymph will not properly organize, and a healthy action cannot be sustained. This anæmic condition favors a constant serous discharge, and, by this means, a certain amount of nutritive material is continually lost, the waste the ulcer has effected is restored, and still more is required and supplied, until a constitutional habit is established and an issue formed. When this condition is once confirmed, perfect granulation is impossible. If, now, we arrest the discharge with a remedial agent that has a specific action upon the constitution in that direction, (and of these, opium is far the best,) the normal work of granulation will immediately commence, and, in a short time, nature will be found to have completed her work of repair.

Mr. SKEY, of London, in the February No. of the *London Lancet*, 1855, declared that opium, in small and regular doses, would cure a chronic ulcer in an anæmic person. I do not know that he explained the specific operation of this drug in these cases, but no doubt it first partially arrests assimilation and disintegration, and thus diminishes the amount to be excreted through the ulcer. This diminution of the wear and tear of the general system changes the local discharge and modifies the character of the part inflamed, which determines the quality and quantity of lymph secreted and its consequent organization. Let us next consider how the condition of these sores is modified by the action of *specific diseases*. These are characterized by a peculiar, definite, morbid material in the blood, having certain specific effects upon it and its nutritive changes with a tendency to accumulate, and manifesting distinctive local phenomena, each variety electing such tissue or organs as are most naturally its prey, and thus effecting those morbid changes which distinguish the operation of each poison. For example, the specific action of the rheumatic poison is upon the white fibrous tissue; small-pox, measles, and scarlatina are each characterized by a distinct cutaneous disease; syphilis, too, may be

said to have its seats of election, though subject to some degree of transformation in its different stages; scrofula, tubercle, and cancer commence, in all probability, in the glandular system, and extend to and destroy or modify neighboring tissue.

The fact is generally admitted, that all foreign substances are, if possible, expelled from the system; therefore, the product of a dyscrasia, or of a diseased organ or tissue, enters at once into the fluid which issues from an ulcer. The result is, that the character of the ulcer is modified by the conjoint causes of the constitutional vice and nature of the fluid issued. Thus, after an ulcer becomes chronic, it assumes precisely the same character, and is prone to the same influences, as the constitution of its subject, and must be treated exactly in accordance with such conditions. But, when the constitution has become habituated to a drainage, and that condition results from a dyscrasia which depends upon a specifically diseased part, except the morbid condition in the latter is overcome, the nutritive interchanges between it and the blood will continue to sustain the dyscrasia; and the arrest of the discharge is a measure which should be wrought with much skill, or the morbid product will accumulate in the blood, and manifest its peculiar characteristics in other situations.

Our considerations then, in diagnosis, should be to ascertain what the complications are; whether merely drainage with debility, or drainage with dyscrasia or specific disease. Each complication is to be met with the most approved treatment, subject to such modifications as the patient's habits, constitution, and local conditions require. Generally, we need not interfere with the discharge; if our patient has proper constitutional treatment, the discharge will need but little attention. Too much haste to dry it up is fraught with danger, it being (if the system is not previously prepared) reäbsorbed and carried into the circulating mass to reäccumulate in some distant part—generally the glandular—and there develope an inflammation, with an aggravation of the dyscrasia.

When there merely exists a sore, subject to drainage and constitutional sympathy, then they can both be suspended until

the wound is healed, by opium in sustaining doses, as Mr. SKEY has shown. But Mr. SKEY would find some of his patients laboring under much trouble, if he should treat all ulcers in anæmic persons with opium. Any of the numerous conditions that may be associated with anæmia must invariably be corrected, and then opium will be a safe and sure remedy.

As regards local treatment, but little interference is generally necessary. The points which require especial attention, are:—1. The removal of all foreign substances, as necrosed or carious bone; pieces of wood, iron, and the like; or a tuberculated base, or tissue so diseased as not to be capable of organization, such as are likely to exist in connection with a scrofulous or cachectic diathesis, may be cauterized or excised. 2. To correct acrid excretions which would interfere with the organization of lymph. 3. Protection from air, and the avoidance of the continued application of water, irritating salves, etc. 4. Position and rest.

The following cases may serve to illustrate some of the ideas advanced in the foregoing pages:—

CASE I. Mrs. T., *æt.* 28, had suffered from an ulcer on either leg for six years; during the latter half of this period menstruation had entirely ceased; the discharge from the ulcers increased monthly, and this increase was accompanied by pain and an aggravation of the inflammation; patient was scrofulous, and her system was weakened; prescribed iodide of potassium, alternated with tinct. muriate of iron. No local treatment was adopted, excepting that the ulcers were washed twice a-day with a solution of chlorinated lime and covered with oiled-silk, which was retained with a roller. Rest was also enjoined. At the expiration of twenty days, the treatment was somewhat modified, by the administration of iodide of iron and opium in small doses; gave sitz-bath, with a few daily applications of a solution of sulphate of zinc. This course of treatment, with but slight variation, in thirty-five days reëstablished menstruation, and in sixty days the ulcers were thoroughly healed. Her health remained good, with no tendency to relapse.

CASE II. Mrs. K., *æt.* 41; ulcers on each leg, caused by

milk-leg twenty years before. She had employed Dr. W., an irregular practitioner, who dried up the sores by local applications and elevated position. In ten days from the time of her apparent recovery, she was taken very ill. I was summoned, and found her suffering from inflammation of the kidney and bladder. I was not aware of the previous existence of the ulcers, and, not being informed of this fact, I prescribed the usual course of treatment, and after a few days' attendance the patient had apparently recovered. But in about a week, I was again called, and was surprised to find her laboring under a severe attack of hepatitis; prescribed accordingly, and in a short time she was again convalescent. About the time of the recovery from this last attack, a neighbor asked me if "her friend's sickness did not depend upon those fever sores being dried up." I then, for the first time, obtained the full history of the case. I immediately applied blisters to the situation of the ulcers and reëstablished the issue, when her general health was completely restored.

Case III. Miss M., *æt.* 18; ulcer existing on each leg; cause syphilis; menstruation absent for a period of fifteen months; sores appeared twelve months ago; prescribed iodide of potassium in large doses; local application of solution of chloride of lime; air was carefully excluded, and rest of diseased parts enjoined. At the expiration of 45 days, the ulcers were healed, and during that time the menstrual function was restored. At this time, without my knowledge, and contrary to my directions, the iodide was suspended, when the ulcers very soon reäppeared, in connection with an eruption on the face, and the menstrual function was again arrested. The former treatment was resumed, a few days ago, in connexion with the sitz-bath and iron. The patient is still under treatment, with every prospect of again restoring the normal functions.

ARTICLE XLIX.

THE RELATIONS OF CANCER AND CONSUMPTION TO CLIMATE IN THE UNITED STATES.

By E. ANDREWS, M.D., Prof. of Surgery in Chicago Medical College.

In all my reading upon the subject of cancer, I do not remember to have seen it suggested that the disease had any relations to climate. In examining, however, the statistics of mortality published in the report of the last U.S. Census, I have taken the pains to extract the figures, and calculate the proportion of deaths from cancer to the total deaths from all diseases in each State and Territory. I have also compared the results with the statistics of consumption in the same regions, and tabulated the whole for reference. This examination throws a gleam of light on the origin of cancer—a subject which has hitherto been shrouded in Egyptian darkness.

The figures show that the deaths from cancer in the United States have a clear and definite relation to the climate; and that the geographical distribution of this disease is almost identical with that of consumption.

The following table shows the proportion of deaths from these diseases to the total deaths from all diseases. The table arranges the States in the order of the frequency of the cancer, from Vermont, where it is most prevalent, to New Mexico, where it is the least frequent:—

Table showing the proportion of deaths from Cancer and Consumption to the total deaths from all diseases in each State and Territory.

	From Cancer.	From Consumption.
Vermont,	1 to 40	1 to $4\frac{1}{6}$
New Hampshire,	1 " 42	1 " $3\frac{2}{3}$
Rhode Island,	1 " 52	1 " $4\frac{1}{8}$
Maine,	1 " 65	1 " $3\frac{1}{3}$
Massachusetts,	1 " 69	1 " $4\frac{1}{5}$
Connecticut,	1 " 80	1 " $4\frac{3}{4}$
New York,	1 " 86	1 " $5\frac{1}{2}$

Pennsylvania,	1 " 95	1 " 5 4/5
New Jersey,	1 " 96	1 " 5 1/3
Ohio,	1 " 104	1 " 6 3/4
Delaware,	1 " 108	1 " 5 11/12
North Carolina,	1 " 110	1 " 15 2/3
Maryland,	1 " 114	1 " 5 9/10
Nebraska,	1 " 117	1 " 12 1/2
Michigan,	1 " 118	1 " 5 6/7
Iowa,	1 " 124	1 " 9 1/4
Virginia,	1 " 126	1 " 10
Wisconsin,	1 " 129	1 " 7 1/3
Oregon,	1 " 137	1 " 9
South Carolina,	1 " 142	1 " 22
Minnesota,	1 " 144	1 " 6 1/3
Georgia,	1 " 146	1 " 22
Florida,	1 " 148	1 " 16
Illinois,	1 " 157	1 " 9 1/2
Alabama,	1 " 162	1 " 19
Tennessee,	1 " 165	1 " 9
Kansas,	1 " 165	1 " 12 2/3
Indiana,	1 " 169	1 " 8 4/5
Kentucky,	1 " 170	1 " 9
California,	1 " 180	1 " 6 2/3
Mississippi,	1 " 187	1 " 19 3/5
Texas,	1 " 198	1 " 19 3/4
Missouri,	1 " 214	1 " 13
Louisiana,	1 " 215	1 " 13 1/3
Arkansas,	1 " 265	1 " 24
New Mexico,	1 " 270	1 " 29 1/2

The first thing noticeable in this table is the general fact, that where cancer is most frequent there consumption prevails most, and *vice versa;* though, as might be expected, there are exceptions to the rule. In the six New England States, cancer is the most abundant, causing from one-fortieth to one-eightieth of the deaths. In the same States, consumption also prevails more than in any other part of the United States. On the other hand, cancer is most rare in Arkansas and New Mexico,

causing there only about 1 death in 270; and in strict accordance with this is the fact, that these two States are likewise freest from consumption. It thus appears that cancer is more than four times as frequent in New England as in Arkansas and New Mexico. A careful study of this table shows that two climatic conditions affect these diseases, *viz.:* latitude and proximity to the sea. To illustrate this fact it is easy to observe that, taking the Atlantic States, these diseases diminish very regularly from Maine to Georgia. If we take the Inland States, the same effect follows, until you begin to approach the sea.

Michigan and Ohio have more of these diseases than Kentucky and Tennessee; but if you go south of this point the influence of the sea begins to be felt, and Alabama has more than Tennessee. In the line of States on the east bank of the Mississippi, the result is nearly the same. Wisconsin is more afflicted than Illinois, Illinois more than Tennessee, Tennessee more than Mississippi, and Mississippi more than Louisiana. Taking the west shore of the river, an analogous result is obtained. For consumption, the order of frequency is thus:—Minnesota, Iowa, Missouri, Arkansas. South of Arkansas the sea again asserts its influence, and consumption increases as you approach the Gulf.

In respect to cancer, the order should be inverted with regard to Iowa and Minnesota, Iowa having the most. The effect of the sea air is shown by the fact, that in the central mountain region of New Mexico there is less of these diseases than in any part of the United States, and that they increase as you approach the Atlantic or the Pacific. Thus, California has more of cancer and consumption than New Mexico; and if we take an eastward course the result is the same, giving this series in the order of frequency, *viz.:* New Mexico, Arkansas, Tennessee, North Carolina.

It is clear then that climate in some way produces cancer, inasmuch as the sea-shore everywhere shows more of the disease than the inland regions, and the northern latitudes more than the southern. As New England has four times as much

eancer, for her population, as New Mexico, it would seem that climate or some other local circumstance produces three-fourths of the cancers of New England. Does it not follow also from this that not only consumptives but also cancer patients from whom tumors have been excised should be sent to Arkansas or New Mexico, where statistics show these diseases to be rarely developed? Might we not hope for great advantage from such a climatic change? Certainly climate is about the only thing yet proved to have any effect upon cancer.

It is singular that Arkansas and New Mexico, which are so much alike in the absence of these diseases, agree in nothing else except these two points, *viz.:* a southern latitude and remoteness from the sea. Their other differences are great. Arkansas has a moist climate, New Mexico a very dry one. Arkansas is only a few hundred feet above the sea-level, New Mexico is from three-quarters of a mile to two miles above the sea in perpendicular height. The capital, Santa Fe, has an altitude of nearly a mile and a-half.

The following Table shows the comparative amount of Consumption in certain parts of Europe and the United States:—

Proportion of deaths from consumption to 10,000 deaths from all known causes.

United States.	England.	Scotland.	Ireland.	French Cities.	Frankfort.
1379	1232	1235	1244	1162	1977

by which it appears that the United States as a whole occupies a medium ground in comparison with Europe.

Proceedings of Societies.

PROCEEDINGS OF THE MORGAN COUNTY MEDICAL SOCIETY.

The Society met at the Court House, in Jacksonville, on Thursday, Nov. 8, 1866, at 11 o'clock A.M., Dr. R. E. McVey, the President, in the chair.

Dr. WARRINER presented a specimen of castor oil which had been deprived of the impurities of the commercial oil, but which had lost none of the valuable properties of this excellent remedy. He remarked that the commercial castor oil was often found adulterated with lard oil. He had succeeded in condensing, by chemicals, the lard oil, separating it from the castor oil.

Though his process was only known to himself, he offered to impart it to the Society, if they deemed it necessary. The expressed opinion of the Society seemed to be that it was no breach of professional etiquette for him to keep his secret; and several members seemed to feel inclined to test the article.

Dr. PRINCE, having been called recently to Adams County, as a witness in a suit for malpractice, described the injuries, and made some general remarks suggested by the trial. The case was a rare dislocation—the forward dislocation of the tibia, slipping over the swell of the astragalus one inch forward of its natural position! The fibula was fractured, but the lower fragment clung to its natural attachments, and was not displaced. Several of the most eminent practitioners of the State, and of the West, were summoned to appear in the case—among others, Dr. Andrews, of Chicago. Not one had ever been called upon to treat, or had known before of, a dislocation of the kind. But little even can be found concerning it in any of the text-books on surgery.

Dr. PRINCE remarked, that a mere knowledge of anatomy did not at once interpret the case. It was a question whether the general practitioner should be better informed than the text-books, or whether he should decline rare and obscure cases.

Dr. EDGAR remarked, that as all physicians were liable to be called upon for surgery, they must take special pains in educating themselves for it; they would be liable for prosecution. More prosecutions arise from fractures and dislocations than from any other source in the practice of medicine. Educate yourselves specially to attend to fractures and dislocations. Never attend a case of fracture or dislocation unless you have an intelligent witness with you. He thought medical schools paid too little attention to the education of their students in these important particulars.

Dr. PRINCE thought that students should be taught to state "that in dislocations a cure cannot be guaranteed." He quoted Dr. Andrews, of Chicago, "who thought that medical men should not be held by the law responsible for bad practice, as they were not allowed by the law of the State to familiarize themselves with anatomy in the proper way."

Dr. ASKEW thought that prosecutions more often arose from the disagreement of doctors than from any other source. If the mantle of charity should be thrown over the little difficulties of practice, there would be much less trouble in the courts about doctors. Instead of trying to rise on their own merits, physicians too often attempt to build themselves a reputation on the failures or demerits of their neighbors. The State should be more rigid in its requirements of qualifications; and should afford ample opportunity for the study of anatomy.

At half-past 12 o'clock adjourned to 2 o'clock P.M.

The first business in the afternoon was the reading of two quarterly reports of the treasurer of the Society, which were accepted.

Dr. Prince not being prepared to give his promised essay, Dr. R. E. MCVEY, of Waverly, read an essay on "Phthisis and its relations with Scrofula."

Dr. PRINCE asked the question, whether the science of medicine had progressed to that point that children, whose parents for generations had died of consumption, could be carried safely through to old age.

Dr. MCVEY thought he had, by the early use of cod liver oil, cured several cases of incipient phthisis.

Dr. EDGAR thought that diseases of the liver were often mistaken for tuberculosis, and that many cases were possibly cases of this kind.

Dr. HENRY JONES remarked, that he had generally failed in his efforts to arrest the progress of this terrible disease, and considered it a very undesirable inheritance.

Dr. MCVEY was requested by the Society to furnish his interesting paper to some medical journal for publication.

The committee on "Fees" desired longer time in the prepa-

ration of their report; Dr. Prince was added to the committee.

The secretary was requested by the Society to furnish a copy of the proceedings of the Society to the *Chicago Medical Examiner* and the *Chicago Medical Journal.*

Society adjourned to meet at 11 o'clock A.M., on the second Thursday in December next.

C. T. WILBUR, M.D., *Secretary.*

PROCEEDINGS OF THE ESCULAPIAN SOCIETY OF THE WABASH VALLEY.

The Esculapian Society of the Wabash Valley met in annual session, at Kansas, Ill., October 31, 1866, at 2 P.M.

The Society was called to order by the President, Dr. JOHN TEN BROOK, of Paris.

The minutes of the last meeting being read and approved, the roll was called, and the following members, present, answered to their names:—

Drs. John Ten Brook, Paris; James Steele, Grandview; W. M. Chambers, Charleston; O. Q. Herrick, John Mills, and Geo. Ringland, Kansas; Wm. Massie, Grandview; D. C. Jones, H. W. Davis, R. L. Walston, S. J. Young, S. B. Ten Brook, and A. J. Miller, Paris; G. W. Albin, Neoga; and J. Van Dyke, Ashmore.

Dr. Massie, Chairman of the Committee on Indigenous Botany, read a very interesting report on that subject. On motion, the report was referred to the Committee on Publication.

On motion, the Society went into an election of officers for the ensuing year, which resulted as follows:—

For President—Dr. O. Q. HERRICK.
For Vice-President—Dr. WM. MASSIE.
For Secretary—Dr. S. J. YOUNG.
For Treasurer—Dr. R. L. WALSTON.

Dr. Chambers arose, and, addressing the Chair, delivered a brief eulogy upon the distinguished and lamented Prof. Brainard, and offered the following resolution:—

Resolved, That a committee of three be appointed by the

Chair, to draft suitable resolutions, expressive of the love and admiration we bear for the memory of this distinguished man, and report at the morning session.

The following gentlemen comprise the committee:—Drs. W. M. Chambers, H. W. Davis, and O. Q. Herrick.

The Society adjourned to meet at 9 o'clock A.M.

In the evening, the Society assembled at the Methodist Church, to listen to the annual address, delivered by Dr. R. L. Walston. The address gave evidence of careful research in its preparation, and was well received.

Nov. 1st, 1866.—The Society was called to order by the President, Dr. O. Q. Herrick.

Minutes read and approved, and roll called.

Dr. R. L. Walston, by request, read a paper on typhoid fever, which was thoroughly discussed and referred to the Committee on Publication.

The committee (through their chairman) appointed to draft resolutions expressive of the sorrow of this Society for the death of Prof. Brainard, reported as follows:—

Whereas, The All-Wise Dispenser of Events has removed from his labors Prof. Daniel Brainard, thereby depriving our noble profession of one among its brightest ornaments, therefore,

Resolved, That, in his death, we recognize the hand of God, and bow in humble submission to his will; but, at the same time, we cannot but feel that a great light has gone out, because we esteem him as among the greatest intellect in our profession. His unsurpassed originality of thought enabled him to grasp the most intricate subjects; and his clear and convincing manner of explaining his views to his class, made him among the most useful of men.

Resolved, That, in consideration of the distinguished worth and ability of Prof. Brainard, the great teacher, we, his co-laborers, desirous of manifesting our appreciation of his life and services, assist in the erection of a suitable monument to his memory.

On motion, the above report was referred to the Committee on Publication, with directions that they be requested to ask its insertion in the Chicago medical journals, *Cincinnati Lancet & Observer*, and the *Medical & Surgical Reporter*, Philadelphia.

The following preamble and resolution, offered by Dr. Chambers, were unanimously adopted:—

Whereas, The Esculapian Society ranks as the oldest medical society in the State, extending over a large portion of it, and numbering among its members many prominent men of the profession who feel a lively interest in its prosperity, have concluded that, inasmuch as they contribute large numbers of students to the medical colleges of the State, it would not be presuming too much to make a recommendation for one of the Chairs made vacant by the death of the lamented Brainard. Therefore,

Resolved, That, in view of the fact, and the eminent qualification and fitness for such a position, we recommend the appointment of Henry W. Davis, M.D., of Paris, Illinois, to the Chair of Surgical Anatomy in Rush Medical College.

On motion, the fee bill adopted, and in use, by the Edgar Co. Medical Association, be, and is hereby, adopted by this Society.

The following gentlemen were appointed delegates to the State Medical Society:—Drs. James Steele, H. W. Davis, W E. Morris, Geo. Ringland, Massie, Bridges, and Young.

To the National Association:—Drs. John Ten Brook, Massie, Herrick, Miller, Ringland, Young, Todd, Morris, Davis, S. B. Ten Brook, and Newell.

On motion, it was understood that the semi-annual meeting of this Society be held in Mattoon, beginning on the last Wednesday in May, 1867.

Standing committees were appointed.

Dr. H. W. Davis was appointed to deliver the public address.

After the usual votes of thanks for the use of the hall for our meeting, and especially for the generous reception we had met with at the hands of physicians and citizens, the Society adj'd.

S. J. YOUNG, *Secretary.*

TRICHINÆ.—Dr. Fiedler says that the trichinæ may find their way into the muscles through the current of the blood, is proved by the facts:—that he has frequently found trichinæ in coagula of the right auricle and ventricle; and that, at times, in the most distant muscles, trichinæ are found, not exceeding in size those found in the abdomen.

The Clinique.

CASE OF CHOLERA—UNUSUALLY PROTRACTED SUPPRESSION OF URINE—RECOVERY.

By N. S. DAVIS, M.D., Prof. Practical and Clinical Medicine, Chicago Medical College.

Mr. P., a resident of Maine, but temporarily sojourning in this city, was attacked on the 28th of October, 1866, with diarrhœa, and had, during the day, three or four large serous discharges, but continued to attend to his business until evening. Between 6 and 7 o'clock in the evening, he had a very copious discharge accompanied by vomiting, and followed by partial syncope. Dr. WILKINS was called in at that time, and promptly applied sinapisms and external warmth freely, with several doses of medicine internally. The vomiting and purging, however, continued frequent and severe, and near 12 o'clock that night I was called to the patient, and requested by Dr. WILKINS to take charge of his further treatment. At that time, the patient presented every symptom of cholera in its active stage. The eyes were deeply sunken; the voice husky; skin cool and shrunken; pulse small and weak; the discharges frequent, copious in quantity, and having the appearance of slightly turbid water. When allowed to stand a little while, it deposited some mucus and epithelium at the bottom of the vessel. There were muscular cramps in the abdomen and lower extremities. Directions were given to have the sinapisms of mustard continued over the epigastrium and dorsal portion of the spine, with dry warmth to the feet and legs, a powder of calomel 1 gr., sulph. morph. ¼ gr., and acetate of lead 1½ grs., to be given every hour; and a teaspoonful of an emulsion, consisting of chloroform ℥iij, sulph. morph. 3 grs., gum arabic and sugar each ℥iij, rubbed up with three ounces of mint-water, immediately after every turn of vomiting.

Oct. 29th, 8 o'clock A.M. Found the patient still vomiting, purging, and cramping, with no change since the night visit

except increasing evidences of exhaustion. Learned, on inquiry, that the attendants had been so remiss as to have given less than half the amount of medicine directed at the previous visit; consequently, the same directions were repeated, with the addition of an enema after every discharge from the bowels, containing 10 grs. of acetate of lead and ½ gr. of acetate of morphia in half a teacupful of cold water.

12 o'clock M. Found the patient still vomiting violently, but no purging during the last two hours, and no cramps. The extremities are quite cold, corrugated, and blue; the pulse very small and weak; inclined to drowsiness between the paroxysms of vomiting, and has passed no urine since the evening of the 20th. As he seemed to reject immediately the chloroform emulsion, he was now directed to have a teaspoonful of the following solution immediately after every act of vomiting:—

℞.	Acetis Plumbi,	30 grs.
	Acetis Morph.,	3 grs.
	Acetic Acid,	10 gtts.
	Aqua,	℥iij

Mix.

And to omit all other internal medicine. We also now began the work of trying to sustain the nervous sensibilities and replenish the exhausted elements of the blood, by giving tablespoonful doses of beef-tea, well salted, and strong coffee, alternately, every 15 minutes. 6 o'clock P.M. Vomiting ceased after the third dose of the solution of the acetate of lead and morphine, and no discharges of any kind since. No change in other symptoms since previous visit, except the patient is more drowsy. Continue the use of the beef-tea and coffee, without medicine. 10 o'clock P.M. No discharges of any kind, and no urine in the bladder. More warmth in the extremities; pulse slightly increased in volume, but still very weak; and more constant inclination to sleep, though easily aroused when spoken to. Directed the beef-tea to be given in doses of two tablespoonfuls at a time, and a solution of 3 drachms of acetas potass. in 3 ounces of water, of which a teaspoonful was to be given every hour.

Oct. 30th, 8 o'clock A.M. Patient much the same as at the preceding visit. There had been no evacuations of either fæces or urine; the mind was somnolent and a little incoherent; respiration slow; pulse soft and irregular: and skin nearly natural in temperature. Ordered a continuance of the beef-tea, and allowed tea to be drank in the place of coffee. Also directed the solution of acetate of potassa to be continued every two hours, and a teaspoonful of nitrous ether the intermediate hour. The patient was visited at 12 M., 6 P.M., and 10 P.M. The only change worthy of note was, one moderate evacuation from the bowels, of a semi-fluid consistence, dark green color, and offensive odor; but no secretion of urine. At the 10 o'clock P.M. visit, the hands were colder, and the pulse slower and weaker. The same treatment was continued, and 10 drops of tincture of cantharides added to each dose of the nitrous ether.

Oct. 31st, 8 o'clock A.M. Patient had remained through the night in a semi-comatose condition, with short periods of restlessness; breathing very slow and irregular; pulse of the same character; vessels of the conjunctiva injected; skin of the face dry and little above natural temperature, but extremities cool. Still no secretion of urine. As the symptoms of uremia were increasing, the use of acetas potassa, nitrous ether, and cantharides was abandoned, and 10 drops of oil of turpentine, with $\frac{1}{20}$ of a grain of strychnine, given every two hours, and as much beef-tea and sweet milk as the patient could be induced to take. In the afternoon, a dark, semi-fluid, and offensive evacuation from the bowels was procured by means of a large enema of warm salt water; and frictions with camphorated soap liniment and oil of turpentine were applied to the abdomen and spine. But no marked change took place in the symptoms of the patient.

Nov. 1st, 8 o'clock A.M. Condition of the patient still essentially the same. The respiration and circulation still slow, irregular, and intermitting; and the mind difficult to arouse from its lethargy. The attendants had not been able to induce him to swallow the emulsion of turpentine and strychnine, dur-

ing the latter part of the night or this morning, and he had taken only a small quantity of milk and beef-tea. No evacuations had occurred, and the bladder was still empty. The attendants were directed to arouse his sensibilities by frequent application of cold water to his forehead and temples, and continue the effort to support him with milk, beef-tea, etc. I also directed a tablespoonful of the infusion of juniper berries to be given every hour, and cloths wet in warm water to be applied to the abdomen and lumbar region. At the visit at 9 o'clock P.M., finding it impossible to get enough of the infusion of juniper berries taken to produce any effect, and there appearing no material improvement in the condition of the patient, he was directed some gin diluted with sugar and water.

Nov. 2d, 8 o'clock A.M. Patient had some paroxysms of greater restlessness during the night. There is at present more heat in the forehead and face, but the extremities cooler; and no improvement either in the respiration or circulation. No evacuations, and the bladder still empty. Although the nurse had tried faithfully, he had not induced the patient to swallow more than four teaspoonfuls of the gin since it was ordered the previous evening. On account of the increased heat in the head, and the continued absence of all intestinal and urinary evacuations, I abandoned further efforts to give the gin, and directed a powder of calomel 2 grs. and nitrate of potassa 5 grs., to be given every two hours. 9 o'clock P.M. Has taken his powders regularly through the day; drank some milk and beef-tea; and had his head and face frequently bathed with cold water. Since 3 o'clock P.M., has become restless, with constant delirium, and a frequent desire to get out of bed. Between 7 and 8 o'clock, his efforts to get up were so persistent that the nurse assisted him up on his feet two or three times, and while thus on his feet, about 8 o'clock, he began to urinate directly on the floor, passing in all about a coffeecupful of urine, presenting a reddish brown color, and a strong urinous odor. During the last hour the patient has rested more quietly; there is less heat in his head; and the respiration and circulation are both perceptibly improved. We directed no change in his

treatment, except that the powders should be continued at intervals of only once in four hours.

Nov. 3d, 8 o'clock A.M. Patient urinated twice during the night, passing nearly a half-pint of rather high-colored urine each time. He had also one rather large semi-fluid and dark-colored fæcal discharge. The mind is still bewildered, with frequent spells of restlessness and attempts to get out of bed; but in the intervals of quiet, his respiration is more uniform, though slow, and the pulse more steady. The free use of animal broth, milk, and tea was continued, and a teaspoonful of the following to be given every three hours:—

℞. Aromat. Sulph. Acid,---------- ℥iij.
Syrup of Wild Cherry bark,---------- ℥iij.
Mix.

Nov. 4th, 8 o'clock A.M. He had urinated three times during the 24 hours, and had several dark-colored and semi-fluid evacuations from the bowels. His sleep had been interrupted by frequent periods of restlessness, and the mental faculties, instead of being dull, began to exhibit an undue degree of wakefulness and exhilaration. Both respiration and circulation have become more natural, but the forehead is still hot. On account of the increasing mental exhilaration, the prescription of the previous day was omitted, and, in its place, 10 grs. of bromide of potassa given every four hours; nourishment and drinks as before.

From this time, the patient continued to improve slowly, until his recovery was complete, although it was four or five days more before his mind became entirely free from hallucinations. It will be observed, that in this case the complete suppression of urine continued nearly five days, which is longer than I have ever seen before, followed by the recovery of the patient.

In one patient, attacked with cholera the present season, the urinary secretion was suppressed nearly three days, with all the symptoms of collapse, and yet recovery took place; but the convalescence was slow, and the lower half of the cornea in both eyes showed well-marked ulcerations.

Book Notices.

A Manual of Auscultation and Percussion. By M. Barth and M. Henri Roger. Translated from the sixth French edition. Philadelphia: Lindsay & Blakiston. 1866.

This is an abridgement of the larger work by the same authors. It is a small volume of 161 pages, very neatly printed and bound. Its style is simple and quite free from technicalities, and its arrangement of topics good. It is an excellent manual, both for students and practitioners.

For sale by S. C. Griggs & Co., Lake St., Chicago.

A Manual of Medical Jurisprudence. By Alfred Swaine Taylor, M.D., F.R.S., Fellow of the Royal College of Physicians, and Prof. of Med. Jurisprudence and Chemistry in Guy's Hospital. Sixth American, from the eighth and revised London edition. With notes and references to American decisions, by Clement B. Penrose, of the Philadelphia Bar. Philadelphia: Henry C. Lea. 1866.

This is a well-executed volume of 776 pages. The former editions have been long enough before the profession to be well known. The value of the present edition is increased by the notes of the present editor referring to legal decisions in the American Courts. While in fulness and completeness it probably cannot compare with the larger work of the late Dr. Beck, it is, nevertheless, one of the best text-books on medical jurisprudence in our language.

For sale by S. C. Griggs & Co., Lake St., Chicago.

A Practical Treatise on Diseases of the Skin. By J. Moore Neligan, M.D., M.R.I.A. etc. Fifth American, from the second revised and enlarged Dublin edition. By T. W. Belcher, M.A., M.D., Dub.; B.M., M.A., Oxon.; etc., etc., etc., etc. Philadelphia: Henry C. Lea. 1866.

This is a duodecimo volume of 462 pages. The editor, Dr. Belcher, has added to this edition several pages of new and valuable matter, a more copious index, the derivation and meaning of technical terms, and the consideration of several diseases not referred to in former editions. As a brief treatise on diseases of the skin, it is one of the best now in the hands of the

profession, and one of the most convenient, either for reference or study.

For sale by S. C. Griggs & Co., Lake Street.

An Introduction to Practical Chemistry, Including Analysis. By John E. Bowman, F.C.S., late Professor of Practical Chemistry in King's College, London, etc., etc. Edited by Charles L. Bloxam, F.C.S., Professor of Practical Chemistry in King's College, London, etc., etc. With 107 Illustrations. Fourth American, from the fifth revised London edition. Philadelphia: Henry C. Lea. 1866.

The former editions of this very convenient and valuable little work, are already familiar to the profession. The editor has made some additions to the present edition; and it will be found one of the best guides for the student of practical chemistry, and a very convenient manual for reference by the profession generally. It is a small volume of 351 pages.

For sale by W. B. Keen & Co., 148 Lake St., Chicago.

Editorial.

Clinical Instruction on Diseases of the Eye and Ear.—We are requested to state that the Hospital Committee of the Board of Supervisors have authorized the admission of all medical students to the clinics given in the ward for patients with diseases of the eye and ear, free of charge. The clinics in this department of the County Hospital are given by Dr. Hildreth, every Saturday morning at 11½ o'clock.

Cancer Curers.—We have recently received a circular from some one styling himself "M. F. Bassett, M.D.," in which he claims to be able to cure cancerous diseases by the use of some medicine, of the composition of which he acknowledges himself ignorant; yet claims "that no mineral poisons enter into its composition." The excuse plausibly set forth in this circular, for using a secret remedy, will hardly deceive any but the most credulous. If M. F. Bassett possesses sufficient knowledge to

entitle him to place M.D. to his name, why does he not subject the remedy he claims to use to such analysis as will determine its composition? Let neither the profession nor the community be deceived by any such pretenses as are set forth in the circular before us.

Chicago Medical Society.—This Society holds its regular meetings on Friday evening of each week. The meetings thus far this season have been well attended. They have been devoted strictly to the consideration of interesting cases, pathological specimens, and the discussion of questions of direct practical importance. At a recent meeting, Dr. J. P. Ross, one of the physicians to the County Hospital, presented several hearts taken from patients who had recently died, showing a very interesting variety of organic or structural changes in that organ. The meeting on the preceding week was occupied with a discussion of the causes and treatment of suppression of urine in connection with attacks of cholera.

Close of the Volume.—This number closes the Seventh Volume of the Chicago Medical Examiner. Its publication will be continued the same size and at the same price as at present. As in the past, so in the future, we shall keep two objects prominently in view in the publication of the Examiner. One, to fill its pages with such matter as will be most valuable to the busy, bedside practitioner in the diagnosis and details of treating diseases. The other, to advocate such principles and measures as will improve the educational and social interests of the profession.

Prize Questions.—The subscribers, a committee of the Connecticut Medical Society, offer the Jewett Prize, of $200, for the best essay on the following question, *viz.*:—"By what hygienic means may the health of armies be preserved?" And the Russell Prize, of $200, for the best essay on the following question, *viz.*:—"The therapeutic uses and abuses of Quinine and its salts." The offer is extended to all physicians and surgeons of the United States and the British Provinces of North

America. In awarding the prizes, the committee will regard the literary merits as well as the scientific value of the papers submitted; and if no essays are received worthy of such liberal prizes, a decision will be deferred and the time extended. Essays may be forwarded to either of the committee, for the Jewett Prize, on or before the 1st of March, 1867; for the Russell Prize, on or before the 1st of March, 1868. Each essay to be accompanied with a sealed envelope, enclosing the name and address of the author. The unsuccessful essays will remain with the member of the committee in whose hands they were originally placed, subject to the order of their respective authors.

B. H. CATLIN, M.D., West Meriden,
L. J. SANFORD, M.D., New Haven,
HENRY BRONSON, M.D., "

October, 1866. *Prize Committee.*

Statistics of Cook County Hospital.—The results of the first year's operations in Cook County Hospital for the Poor, are shown in the following report to the Board of Supervisors. It must be remembered that Cook County embraces the city of Chicago:—

Supervisor Woodworth presented the report of the medical board of the County Hospital. The following facts are gathered from it:—

Since the organization of the Hospital, in January, 1866, the number of patients under treatment has been 807. Of these, the number admitted into the medical wards has been 505; admitted into the surgical wards, 258; admitted to the eye and ear department, 44. Total, 807.

From the medical wards, the number discharged cured was 326; the number relieved was 50; deaths, 87; remaining, 42. Total, 505.

From the surgical wards, the number discharged after cure, was 208; relieved, 10; deaths, 10; remaining, 30. Total, 258.

From the eye and ear department, there have been discharged after cure, 27; discharged after relief, 5; transferred from the medical department, 1; absconded from the hospital, 3; remaining, 8. Total, 44.

The number of births in the lying-in department, has been 34.

During the month of October, a dispensary for the relief of

the outside poor was opened in the basement of the hospital. The number of patients who have applied at the dispensary has been 35. The dispensary is open every day of the week, Sundays excepted, from 1 till 2 o'clock P.M., for medical and surgical cases. Patients with diseases of the eye and ear are admitted at 11 A.M.

The high rate of mortality among the inmates, is owing to that combination of causes which, in public institutions like this, from which the friendless and homeless victims of incurable disease cannot be excluded, always operates to swell the death list beyond the figures which obtain in those hospitals where only acute diseases are treated. Of the deaths which occurred in the medical ward, 45 were cases of chronic, incurable diseases. The recent epidemic of cholera added 8 names to the fatal list. Not less than 20 patients have been admitted in a moribund condition, and have expired within a few hours after their reception.

Announcement of the Physician's Pocket Record, for 30 Patients.—We propose soon to publish from the office of the *Medical and Surgical Reporter*, a new and improved *Physician's Pocket Record*, comprising the following features (subject to such modifications as may be suggested while preparing):—A perpetual calendar; a list of new remedies, their application, doses, etc.; poisons, and their antidotes; treatment of persons asphyxiated; medicinal weights and measures; table for calculating the period of utero-gestation; table for calculating the probable duration of life; classified list of the chief articles of the materia medica, their doses, and market value; table of signs; a visiting list, day-book of accounts and daily memoranda, combined. An Appendix, containing:—An index of patients; obstetric, vaccine, and other engagements, etc.; fee tables, city and country; list of medical periodicals, with their subscription price.

It will be seen that this *Pocket Record* comprises some *new features* that cannot fail to make it the most useful and popular work of the kind in use. It will be neatly, compactly, and substantially got up, of a size more suitable to the side pocket than any now before the profession. It will be so arranged as to be available as a visiting list at any season of the year; that

is, it will serve *for a year from the date of purchase.* The visiting list will include a record of visits, a day-book of accounts, and memoranda for each day on the same page.

This *Pocket Record* is intended to meet the wants of both city and country practitioners, and to be an *indispensable companion.* It will not be bulky, although it contains so much material.

As the work is so arranged as to be applicable to any season of the year, we shall issue small editions, so that they can be frequently revised, and any improvements introduced that may be suggested by experience, for we wish to make a *perfect record* for the physician in daily practice. Price $1.50. The *Reporter* and the *Pocket Record* one year, $6.25.

Address, Office of the

MEDICAL AND SURGICAL REPORTER,

Philadelphia, Pa.

Obituary.—Surgeon and Brevet-Brigadier-General C. S. Tripler, U.S.A.—

General Orders, No. 89.

War Department,
Adjutant-General's Office,
Washington, Oct. 27, 1866.

The following notice of the decease of a distinguished officer of the Medical Department of the Army, by the Chief of his Department, is published to the Army:—

"Surgeon-General's Office,
" *Washington, Oct. 23, 1866.*

" *To the Adjutant-General, U.S. Army:—*

"Sir:—I have the honor to report the death, at Cincinnati, on the 20th instant, of Brevet-Brigadier-General C. S. Tripler, Surgeon, U.S. Army, Medical Director, Department of the Lakes.

"Entering the Army as Assistant-Surgeon, October, 1830, General Tripler served continuously for thirty-six years, during which time he held, with credit to himself and advantage to the Government, positions of high trust and responsibility, taking part in the Seminole war, the war with Mexico, the occupation of California, and being the first Medical Director of the Army of the Potomac.

"His skilful administration and conscientious discharge of

duty has been rewarded by three brevets for 'faithful and meritorious services.' The Medical Corps possesses, in his distinguished career, a bright example of the union of great professional attainments, with the military zeal and pride of an officer, and those qualities which mark the Christian gentleman.

"Very respectfully,
"Your obedient servant,
"J. K. BARNES,
"*Surgeon-General.*"

By order of the Secretary of War:—
E. D. TOWNSEND,
Assistant-Adjutant-General.

Prize Essays.—We have received, and cheerfully aid in giving publicity to the following liberal offer by Dr. O'Reilly:

New York, 114 West Fourth Street,
(washington square, south,)
November 28, 1866.

JAMES ANDERSON, M.D.,
President New York Academy of Medicine:

My Dear Sir—

I send you, herewith, a Bank Book, by which you will perceive I have placed to the credit of the Academy of Medicine six hundred dollars ($600), in the Emigrant Savings Bank, Chambers Street.

I consider that I have fully established the following facts (unfortunately, I regret, highly talented and learned men, who, I presume, have not studied the subject, think otherwise):—

I. That the ganglionic or vital nervous system is the most important organization in man, inasmuch as it is the seat of life.

II. That the oxygen is next in importance, its presence being necessary for the production of the manifestations of life.

III. That the blood ranks next in importance, as it serves for conveying oxygen to the ganglionic or vital nervous tissue, as well as provides for the wear and tear of the body.

IV. That the cerebro-spinal nervous system stands fourth in importance, and is important only as providing for the physical necessities or comforts of man, but not essentially necessary for the preservation of life, as proved by comparative anatomy as well as from facts deducible from other sources.

V. That the ganglionic or vital nerves of the fœtus and the vital or ganglionic nerves of the mother isosculate in the placental lobule, thus establishing a nervous communication between the mother and child.

VI. That life is communicated to the semen much in the same way that electricity is communicated by the torpedo to any object coming in contact with it when that animal is in a state of excitement; or as the pictures of flowers or plants are represented on the bodies of persons killed by lightning, in like manner, the appearance of the internal organization of the male is reflected on the semen at the moment of its emission by the vital shock or current.

I conscientiously believe that no man can scientifically practice medicine or surgery without having a thorough knowledge of the functions of the ganglionic or vital nervous system, the oxygen, and the blood; therefore, that it is the incumbent duty of every lover of the medical and surgical profession to promote the study of these subjects as far as his position enables him to do so. Let any man study the operations of the vital nervous system of the oxygen and the blood, and he will have no difficulty in accounting for the cause of death, the mode in which diseases are propagated and the mode in which they are cured, or why they fail to be cured.

Some time ago, I offered a premium of five hundred dollars for the best essay on the nervous system. As but one essay was handed in, an impartial prize could not be awarded. I would now most respectfully suggest to the Academy the propriety of giving a premium of six hundred dollars for the best "Essay on the Vital or Ganglionic Nervous System, the Oxygen and the Blood, and the Cerebro-Spinal Nervous System," to be competed for by medical students of the United States, and medical graduates of three years' standing.

Physiologists have a very vague idea of the functions of the vital or ganglionic nervous system and the cerebro-spinal nervous system. They confound the functions of both systems together, as if there was only one nervous system, whereas there are two. Hence the confusion, the uncertainty, and the obscurity of their explanations.

With respect to oxygen, all that physiologists seem to know about it is, that if a man has not oxygen he will die; in other words, if a man be drowned, he will be taken up dead; or, in technical language, he will have died of apnœa, or shortness of breath. They don't give a scientific explanation of the cause of death. They appear to be ignorant of the fact that oxygen is the food of life, located in the vital nervous system; that the oxygen is communicated to the vital nervous tissue on the internal coat of the arteries, with which it enters in combination, thus feeding life. They totally ignore the palpable fact that

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the blood ceases to have any oxygen the moment it ceases to be in contact with the arteries, and consequently with the nerves in the internal coats of the arteries, and the nerves in the capillary extremities of the arteries.

Hoping God will expand the minds of medical men, so as to enable them to unravel and comprehend the operations of the most beautiful, marvelous, and glorious works of His creation, and wishing the Academy a prosperous, a useful, and a scientific career, I have the honor to be, with great respect and esteem,

Your most faithful and obliged servant,

JOHN O'REILLY.

Guaco as a Remedy for Cholera.—A series of observations on the treatment of cholera by "guaco," during the worst period of the epidemic at Amiens, France, is presented by Dr. Bourneville, as giving the following results:—1. Confirmed cholera, refractory to ordinary treatment, 10 cases, 6 cures, 4 deaths. 2. Violent cholerine, 4 cases, 4 cures. 3. Choleriform diarrhœa, 4 cases, 4 cures. Mutis, the learned *quinologist*, brought this plant (guaco) to our knowledge, and considered its discovery one of his most valuable scientific conquests. It is unnecessary to say that, concurrently with the cinchonas, guaco was used by the South American Indians long before our *savans* discovered it. For the Indians the bark was the specific for fever, the guaco for poisoned wounds and the like. They used internally the juice of the plant, and externally its powdered leaves. It is but recently, that Dr. Pascal Tardieu and friends made experiments upon guaco prepared in the forms of wine, elixir, and infusion, and found it possessed of valuable properties, arousing to action the entire digestive apparatus.

The *Abeille Medicale*, from which we condense these facts, boasts of the exactness with which the observations were made and recorded, but does not give any details.—*Medical Record.*

Mortality for the Month of October.—Below is given the mortality report for the City of Chicago for the month of October, as drawn from the books in the office of the health-officer of the City. It will be seen that the number of deaths during the month was 1170, an increase over the month preceding of 431, and an increase over the corresponding month of last year of 810, or over three times as many as for the corresponding month of 1865:—

CAUSES OF DEATH.

Accidents,	11	Fever, Typhoid,	38
Bronchitis,	1	Fever, Typhus,	1
Cancer,	2	Fever, not stated,	12
Childbed,	3	Hemorrhage,	1
Cholera,	673	Hydrocephelus,	1
Cholera-Morbus,	15	Inflammation,	2
Cholera Infantum,	9	Inflammation of Brain,	12
Congestion of Brain,	4	Inflammation of Bowels,	7
Congestion of Lungs,	1	Inflammation of Kidneys,	5
Colds,	1	Inflammation of Lungs,	3
Consumption,	43	Intemperance,	1
Convulsions,	46	Marasmus,	3
Croup,	8	Measles,	6
Delirium Tremens,	2	Neuralgia,	1
Decline,	4	Old Age,	13
Diarrhœa,	21	Poisoning,	2
Diphtheria,	12	Pleurisy,	2
Disease of Bowels,	1	Phthisis Pulmonalis,	1
Disease of Brain,	3	Rheumatism,	1
Disease of Heart,	6	Scrofula,	2
Disease of Liver,	4	Stillborn,	9
Disease of Lungs,	6	Summer Complaint,	38
Disease of Spine,	1	Suicide,	1
Disease of Throat,	2	Teething,	13
Disease of Hip,	2	Tuberculosis,	2
Dropsy,	6	Whooping-Cough,	19
Drowned,	4	Worms,	1
Dysentery	10	Wound,	1
Erysipelas,	1	Uremia,	1
Fever, Childbed,	2	Unknown,	37
Fever, Remittent,	17		
Fever, Scarlet,	8	Total,	1,170

Ages of the Deceased.—Under 5 years, 329; over 5 and under 10 years, 95; over 10 and under 20, 66; over 20 and under 30, 202; over 30 and under 40, 190; over 40 and under 50, 116; over 50 and under 60, 72; over 60 and under 70, 47; over 70 and under 80, 22; over 80 and under 90, 5; over 90 and under 100, 1; unknown, 25. Total, 1,170.

NATIVITIES.

Chicago,	331	Germany,	223	Sweden,	23
Other States,	260	Holland,	2	Scotland,	8
Bohemia,	24	Ireland,	168	Switzerland,	1
Belgium,	2	Norway,	44	Wales,	2
Canada,	13	Nova Scotia,	1	Unknown,	20
Denmark,	3	On the Sea,	1		
England,	39	Poland,	1	Total,	1,170
France,	3	Spain,	1		

Mortality for the Month of November.—The following is the mortality report of the Health-Officer, for the month of November, 1866. It presents a marked decrease in the number of deaths from the month of October:—

CAUSES OF DEATH.

Accidents,	16	Fever, Remittent,	8
Asthma,	3	Fever, Scarlet,	6
Apoplexy,	1	Fever, Spotted,	1
Burned,	3	Fever, Typhoid,	18
Cancer,	6	Fever, not stated,	4
Childbed,	4	Gunshot Wound,	3
Cholera,	12	Hemorrhage,	3
Cholera-Morbus,	4	Hydrocephalus,	3
Cholera Infantum,	1	Inflammation of Brain,	9
Congestion of Brain,	6	Inflammation of Lungs,	13
Congestion of Lungs,	4	Inflammation of Liver,	1
Consumption,	39	Inflammation of Bowels,	4
Convulsions,	47	Intemperance,	4
Croup,	11	Measles,	1
Cold,	1	Marasmus,	1
Disease of Brain,	1	Old Age,	12
Disease of Heart,	2	Phthisis Pulmonalis,	2
Disease of Liver,	2	Paralysis,	3
Disease of Kidneys,	1	Stillborn,	8
Disease of Hip,	1	Summer Complaint,	5
Disease of Lungs,	2	Scald,	1
Disease of Throat,	1	Teething,	7
Delirium Tremens,	3	Tuberculosis,	2
Decline,	3	Uremia,	1
Dropsy,	9	Ulcer,	1
Diarrhœa,	5	Whooping-Cough,	17
Diphtheria,	12	Wounds,	1
Dysentery,	2	Unknown,	36
Drowned,	2		
Erysipelas,	3	Total,	382

Ages of the Deceased.—Under 5 years, 173; over 5 and under 10 years, 20; over 10 and under 20, 25; over 20 and under 30, 39; over 30 and under 40, 36; over 40 and under 50, 40; over 50 and under 60, 15; over 60 and under 70, 12; over 70 and under 80, 11; over 80 and under 90, 2; over 90 to 100, 1; unknown, 8. Total, 382.

NATIVITIES.

Chicago,	162	Norway,	15	Switzerland,	1
Other States,	72	Sweden,	1	France,	1
England,	5	Canada,	7	Italy,	2
Germany,	51	Ireland,	39	Unknown,	18
Denmark,	1	Scotland,	6	Total,	382

North, ... 73 | South, ...137 | West, ...172 | Total, ... 382

Total number during the month of October,	1170
Total number last year for the month of November,	299
Decrease from last month,	788

Public Health.—Comparison of Cities.—Dr. Farr, presiding over the late session of the British Science Association, instituted a comparison between the leading nations of Europe, in respect to public health. Russia's death-rate is the highest, if the lecturer's statistics may be trusted, being thirty-six per thousand, while the mean life-time is but twenty-five years, the mortality being greatest in the southern part of the empire.

It would be interesting to know the comparative consumption of brandy in Russia, which is a pretty large item in the undertaker's record.

Italy's death-rate is thirty, and the population of the country is as unhealthy as that of the towns. Rome is the healthiest city on the peninsula, because of her aqueducts. The Germans do not live thirty years on an average, and die at the rate of from twenty-nine to thirty in the thousand. Norway is the most desirable country to live in, since the mean of years is fifty, and the death-rate seventeen. Holland's death-rate is twenty-six. Belgium, France, and England's twenty-two. In England, the mean age is twenty-six, the average length of life, thirty-five. In sixty years, the increase of the Anglo-Saxon race, all over the globe, has equalled the present population of France.

Swinging as a Remedy.—Brown-Séquard recommends the use of the swing as a preventive of nervous paroxysms which recur periodically. In certain cases of hysteria and epilepsy, he has prevented the paroxysm by engaging his patient in violent swinging at the first indicaion of the accession of the fit. The *modus operandi* is easily explained.

CHICAGO CHEMICAL & PHARMACEUTICAL LABORATORY & DRUG MILLS.

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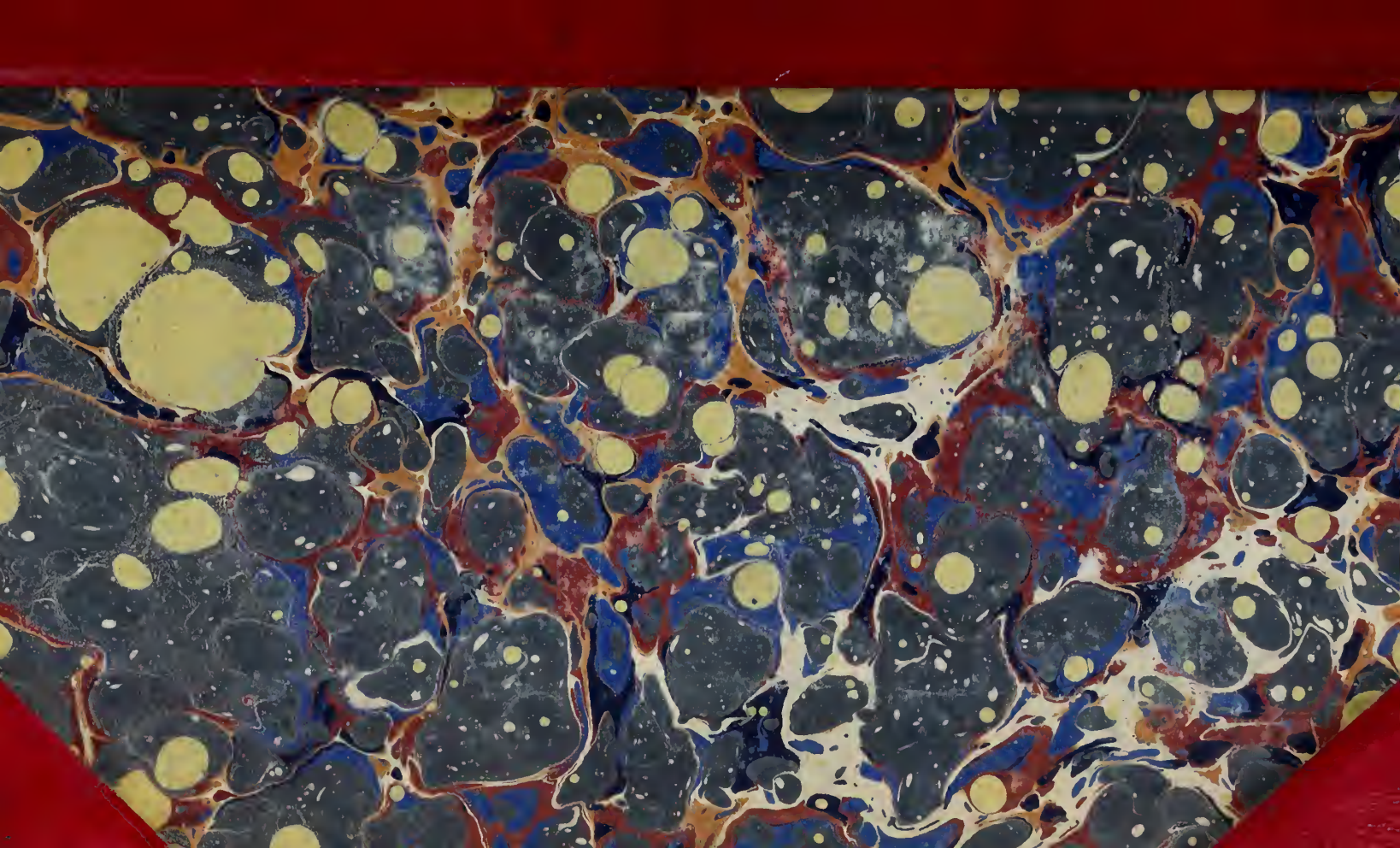
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